

External Audit Fees and Fair Value Disclosures among Jordanian Listed Companies: Does the Type of Corporate Industry Matter?

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ABSTRACT

Manuscript type: Research paper

Research aims: This paper investigates industry differences associated with audit fees charged by Jordanian external auditors, who provide assurance for clients' financial disclosures following the introduction of the fair value accounting (FVA) instrument.

Design/Methodology/Approach: The study uses 2408 firm-year observations among Jordanian firms for the period between 2005–2018, and employs the ordinary least squares (OLS) regression method.

Research findings: A significant and positive difference in the correlation between the proportion of FVA and audit prices was evident for the finance industry vs. non-finance industries. Specifically, the moderating impact of the industry type was positively (negative) correlated in relation to the Level 2 (Level 1) fair-valued assets, but not significant for Level 3 assets.

Theoretical contribution/Originality: This study is an opportunity to document important empirical evidence for a country with varied economic features, regulations, and an environment which is considered representative of Arab countries and the Middle East (ME),

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i.e., Jordan. It introduces an updated model on audit fees and new empirical evidence addressing the gap among auditing literature works by investigating the post-implementation cost of FVA amongst different industries. This study pioneers audit research and triangulates the agency, signalling and stakeholder theories associated with the fair value model.

Practitioner/Policy implication: The findings provide policymakers and standard setters with updated empirical evidence on the implications of fair value disclosure (FVD). It provides guidance on audit fee determinants arising from fair value financial reporting. The outcomes are meant to assist Jordanian authorities for supervising the audit profession, as well as regulating and auditing these fair value practices.

Keywords: Auditing Fair Value Accounting, Audit Fees, Corporate Industry Type, Developing Countries, Fair Value Disclosure, Jordan

JEL Classification: M41, M42

1. Introduction

The amended IAS 39 – “*fair value option*” introduced via the fair value accounting (FVA) for financial instruments was released by the International Accounting Standards Board (IASB), through the International Accounting Standards (IAS) in 2005 (IAS Plus, 2005). The rationale of the IASB for adopting the fair value measurements (FVM) was to promote relevant financial information, better transparency/full disclosure of financial reporting, and solve problems that were inherent in the historical cost (HC) principle (Barth, 2018; IAS Plus, 2019). However, through further disclosure requirements of the FVA using the amended IFRS 7 – “*Financial Instruments: Disclosures*” –, it was seen that the FVA introduced new substantial difficulties for auditing and preparing and confirming FVA through three input levels: Level 1, Level 2, and Level 3 (Griffith, 2020; Nguyen, 2019). Based on the IFRS 7, the Level 1 inputs reflected active market quoted prices, Level 2 were inputs which were observable, and Level 3 inputs were usually risky and complex ones which reflected unobservable inputs to measure the fair values (IAS Plus, 2019). Auditing is complex, and many disclosures require extra auditing due to agency problems (McDonough et al., 2020). The increasing use of complex estimates of FVA has encouraged management bias and puts further pressure on the need for high-quality audits (Cannon & Bedard, 2017). Consequently, more audit

effort and time is required from the auditors to provide assurance in terms of financial reporting, which eventually leads to higher audit fees (Abdullatif & Al-Rahahleh, 2020).

In Jordan's case, FVA is aggressively used by companies due to the growing reliance of Jordan's economy on external exports, which has increased the use of financial assets by domestic companies (Abdullatif, 2016). The need for external assurance regarding fair values has become particularly important in Jordan. An explanation for this is the higher fair value abuse, and frauds caused by the non-availability of fair value information, as well as the weaknesses in corporate governance schemes.

In line with this view, the global financial crisis (GFC) in 2008 identified potential leaks and witnessed FVA abuse and fraud cases, where managers used FVA to convince owners on how well their firms were performing (De Jager, 2014). The severity of the GFC led to questions about the role of auditors, as so many of these financial institutions received unqualified audit opinions, which eventually caused an economic collapse (Alharasis, Prokofieva, Alqatamin, & Clark, 2020). Following the GFC, auditing FVA was the main emphasis for international accounting and auditing institutions (IAASB, 2008).

Empirical studies on FVA's post-implementation have kept growing but are yet to be established as an area of research (Sangchan et al., 2020). Only a few studies have been published on developing countries, particularly those in the Middle East (ME). Two major studies (Alexeyeva & Mejia-Likosova, 2016; Ettredge et al., 2014) examined the impact of fair value for financial assets on audit pricing with mixed results using the banking industry data from developed economies, such as the US and EU, where different accounting systems were employed (GAAP vs. IFRS). The differences associated with industry type have not yet been explored to date (Hay et al., 2006; Badia et al., 2017; Huang et al., 2020). Unlike prior analyses, this study uses data from finance and non-finance industries. It generated the first evidence concerning the differences in the nature of the relationship between the fair value disclosure (FVD) and the audit fees amongst different industries.

It is worth noting that issues in preparing and auditing FVMs are technically complex and vary from one industry to another (Lin et al., 2017). Corporate industry type is confirmed to be a significant factor which affect the amount of audit fees paid to external auditors by corporations (Glover et al., 2017). Some researchers have emphasised the importance of investigating audit fee determinants in the finance industry (Alexeyeva & Mejia-Likosova, 2016; Cameran & Perotti, 2014;

Ettredge et al., 2014; Fields et al., 2004; Krishnan & Zhang, 2014). Others have sought to focus on the non-finance industries (Craswell et al., 1995; Sangchan et al., 2020; Simunic, 1980; Yao et al., 2015), and some concentrated on both finance and non-finance industries (Abernathy et al., 2019; Al-Harshani, 2008; Badia et al., 2017; Chung & Narasimhan, 2002; Hay et al., 2006; Huang et al., 2020; Karim & Moizer, 1996; Lin et al., 2017; Naser & Nuseibeh, 2008; Goodwin-Stewart & Kent, 2006). There is no real academic agreement on the specific industry impacts on external audit prices.

Additionally, the conflicting outcomes of prior empirical studies on auditing prices after the application of the FVA further encourage this attempt to examine how this relationship is impacted by the industry type. This paper is the first of its kind to investigate factors which affect the audit fees concerning FVA, and if this association differs amongst various type of industries building on the work done by Lin et al. (2017), and Badia et al. (2017). Moreover, it combines agency, signalling and stakeholder theories to evaluate the FVA consequences on audit pricing across various industries. Therefore, it strives to fill the theoretical gap highlighted by Samaha and Khlif (2016), who confirmed that the signalling theory had not been tested in developing countries, which was concerned with the compliance of IFRS /FVD. Given that the current study period was aligned with FVD requirement timelines, such as IAS 39 in (2005), IFRS 7 in (2008), and IFRS 13 in (2013), it sought to address the call of the IASB for more examinations on the post-*IFRS 13 – “Fair Value Measurement”* consequences related to auditing practices (IASB, 2017). Provided here is evidence on the impact of industry type on the connection between FVD and audit fees. This link had been missing ever since the FVD requirements became law in 2005 (Sangchan et al., 2020).

The proposed model in this study is supported by empirical results garnered from the ME and Jordan, using an extended 14-year sample (2005-2018), as well as work by Abdullatif (2016). Since most of the research on the audit market was conducted across developed countries, an examination is needed in Jordan, especially after the first adoption of the IAS/IFRS requirements regarding the disclosure of detailed amounts of fair-valued assets in company annual reports. Furthermore, this study was motivated by the widespread adoption of the IFRS in emerging economies in recent times (Al-Htaybat, 2018).

The hypotheses are tested using the OLS regression analysis utilising data from across 172 Jordanian listed firms (2408 firm-year

observation) between the years 2005–2018. The study has confirmed a positive and significant effect for the moderating corporate industry type on the relationship between the proportion of FVA, and audit prices. The analysis has found that the moderating role of the industry type is positive in relation to the Level 2 assets. However, it is deemed to be negatively correlated for Level 1, and not significant for Level 3. The findings suggest that making FVA a legal requirement has triggered several challenges amongst auditors because of the complex estimates and adjustments during evaluation of assets and liabilities. Consequently, audit fees reflect the substantial difficulties and risks which underly financial assets. Accordingly, auditors as a monitoring tool seek to diminish information asymmetry caused by agency problems. Higher fees proxy for greater risk, and more time and effort spent by auditors in evaluating fair-valued assets to protect stakeholders' rights (Huang et al., 2020; Sangchan et al., 2020).

This examination is encouraged by major improvements in FVA legislations to supervise FVA applications, and accounting and auditing practices in Jordan between 2008–2015, such as the “New Fair Value” regulations to create favourable financial reporting conditions. With limited research being published on accounting in the ME, especially in Jordan, this analysis reflects the growing attention in the area as a channel for foreign investments (Abdullatif, 2016; Al-Htaybat, 2018; Hassan et al., 2014; Tahat et al., 2016). Given the dramatic changes in the ME business environment, according to the government's stated “Jordan 2025” plan, this paper contributes to the current and future policies issued by relevant government authorities. The study's findings have serious implications for standard setters and policymakers, by offering new evidence in Jordan on the implementation of the FVA model. Therefore, the study's conclusions are meant to assist Jordan's government to meet the “Jordan 2025” development plan by emphasising and providing more specific guidelines and legislations which simplify and improve compliance with FVD requirements. In doing so, the preparations and audits will be guided by the government guidelines, on how to determine audits against the fair values. Such legislations could play a vital role in protecting investors by enacting more strict penalties against the auditors who violate the laws, thus providing stakeholders a high level of investor protection. High quality financial reporting helps create an attractive investment environment as required by the Jordanian government (Alhababsah, 2019). The findings, moreover, are expected to attract both auditor and client interests from

different industries, by revising the recent auditing models, which can help subsequently to determine auditing prices prior to the FVA implementation.

The remainder of the paper is structured as follows. Section 2 provides the institutional background. Section 3 outlines the theoretical basis of the paper and hypotheses development. Section 4 addresses the data construction and methodology. Section 5 summarises the results and discussion. Section 6 provides robustness checks, and lastly Section 7 concludes the paper.

2. Institutional Background

Jordan is an Arab country with strong social and international relationships. Cultural and political factors have led to several improvements in its corporations, and how they do business, especially their preparation of accounting information (World Bank, 2021). Significant improvements in accounting regulations began in early 1988, when Jordan became a member of the International Accounting Standards Committee (IASC). This was followed by the establishment of the Jordanian Association of Certified Public Accountants (JACPA) as a local accounting body in 1989. The JACPA was then advised by IASC to adopt the IASs for all Jordanian firms in 1990. Later on, in 1997, when the “Companies Law No. 22” was issued, this required all Jordanian companies regulated by the Companies Law to prepare accounting records and present audited financial information based on “internationally recognized accounting and auditing principles” (Tahat et al., 2018). In 1997, the “Companies Law” introduced the framework of governance policy in Jordan. Shortly after, in 1998, the “Securities Act No. 23” was issued, and the Jordan Securities Commission (JSC) declared that; firstly, all listed companies needed to follow the IFRS financial reporting rules; and secondly, auditing had to be done under the guidelines of the International Standard on Auditing (ISA) (Abdullatif & Al-Rahahleh, 2020).

Given the scarce natural resources in Jordan, the government has during the last few decades tried to enhance governance and disclosure frameworks in order to improve trust and confidence in the economy (Abdullatif & Al-Rahahleh, 2020). Therefore, the adoption of the IAS/IFRS standards by developing market economies, such as Jordan, has become critical in order to reach a high level of transparency and comparability in terms of financial information, which in turn, would promote international trade between the Arab countries and other parts

of the world (Al-Htaybat, 2018; Barth, 2013; He et al., 2012; Jacob & Madu, 2009). The main objective of such requirements is to increase what is being disclosed in a firm's annual report. Essentially, improving the quality of firms' financial reporting assists users in making their decisions (Abdullatif, 2016). It is important to note that the transition to the IFSR/IAS has important implications for the accounting and auditing profession around the world, given that the situation has worsened in developing countries, Jordan in particular (Tahat et al., 2018; Ye et al., 2018).

By the year 2005, the Jordanian finance businesses were required to use FVA under IAS 39, and the common assets were measured based on the FVA which was held-for-trading and held-for-sale. The adoption of the FVA in Jordan is a major issue, which has brought serious problems to the country's economy. The recognition of unrealised gains/losses of fair-valued assets in Jordan have raised share prices to the highest levels during the economic downturn. The volatility in share prices have caused poor investment decisions to be made, due to the lack of knowledge on how the stock market worked. The growing reliance of Jordan's economy on exports have triggered a rise in the use of financial assets by Jordanian companies, which eventually have led to damaging publicity on financial instrument losses in the media (Siam & Abdullatif, 2011; Tahat et al., 2016). The problem of implementing FVA was escalated by the growing need for disclosures regarding fair value of financial assets. Such events have forced the government to take steps through the JSC to overcome the problems caused by the fair value adoption on Jordan's stock market.

The "New Fair Value" regulations were released in February 2008 through the JSC, to overcome the volatility in the market, and were later revised in 2011. During the years of boom and before the recession, the JSC's new regulations in 2014 emphasised supervising the external auditor's role in improving the quality of the disclosed fair-valued information by Jordanian firms. In 2015, the government promulgated the "Jordan 2025" plan, which focused on an export-oriented economic strategy, by boosting trade with other countries in the region, especially among the Gulf Cooperation Council (GCC) states. The plan aims to make Jordan a gateway to regional markets and take advantage of free trade agreements (Embassy of Jordan, 2018). Such regulations could meet the Jordanian's government objectives which are meant to attract foreign investors by sending positive signals about the country's firms and associated financial stability and publish high-quality financial information.

Therefore, Jordan was selected for this investigation for many reasons. Firstly, results obtained from this examination can be generalised for all the ME regions. The growing interest in accounting research in the ME region is boosted by countries having comparable cultures, religion, political and accounting systems (Tahat et al., 2018). Secondly, the increased use of financial instruments by Jordanian companies, as well as the publicity on financial instrument losses reported in the media, have further encouraged this examination to concentrate on the FVA of financial assets in Jordan (Tahat et al., 2016). Thirdly, Jordan is the only Arab country which requires listed firms to disclose the audit fees paid in their annual reports as a legal requirement and have done so since 2001. Finally, the implementation of the IAS/IFRS for almost 30 years in Jordan has provided an insightful evaluation on how FVMs are prepared and audited under different circumstances (Al-Htaybat, 2018).

3. Theoretical Perspective and Hypotheses Development

3.1 Theoretical Perspective

As shown in Figure 1, the current study explores the application of FVA through the triangulation of the agency, stakeholder, and signalling theories (see Alharasis, Prokofieva, Alqatamin, & Clark, 2020; Alharasis, Prokofieva, & Clark, 2020). FVA operates as a principle that prevails in the current organisational environment and has become strongly linked to signalling and stakeholder theories. The organisational environment makes the implementation of the FVA principles challenging due to the use of unobservable and complex estimates, as well as potential fraud by managers, as suggested by the agency theory. While the triangulation agency and signalling theories explain the choice of accounting methods (Khlif & Achek, 2016; Samaha & Khlif, 2016), the stakeholder theory makes it possible to assess the application of FVA in its wider social fabric, where managers are accountable to more stakeholders (Huang et al., 2020).

The agency theory expresses the conflict between shareholders and managers, which is also reviewed in the stakeholder theory, which looks at stakeholder groups (An et al., 2011). Signalling and stakeholder theories are used to explain the communication aspect of the FVD and the interaction between users. While the overall aim of the financial disclosure is captured in the stakeholder theory, the signalling theory suggests a motivation for subjective judgements in fair value

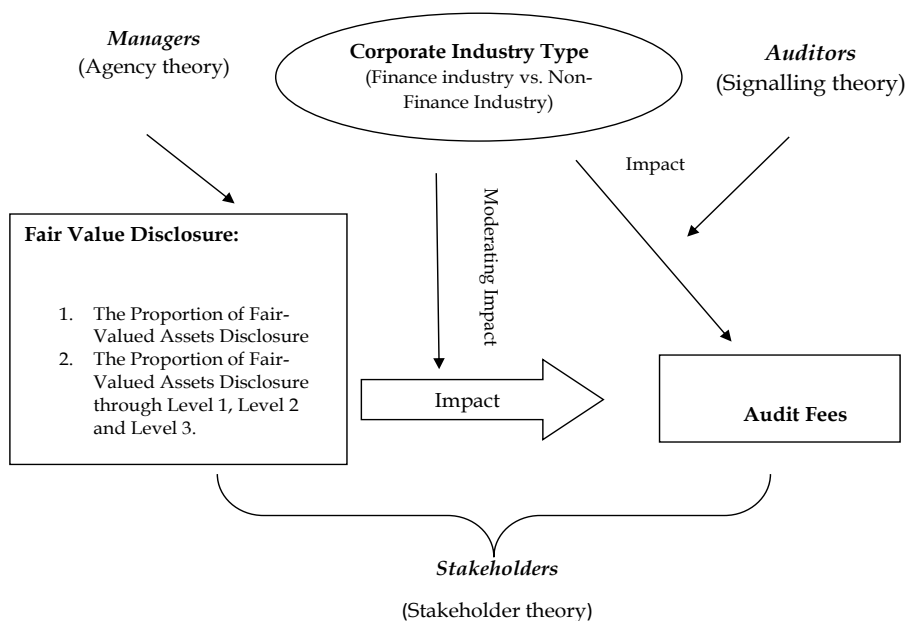


Figure 1: Application of FVA through the Triangulation of the Agency, Stakeholder and Signalling Theories

assessments. The signalling theory introduces an additional motivation for FVD as a credibility mechanism and monitoring tool (Khlif & Achek, 2016). The agency theory is consistent with the signalling theory in terms of considering information asymmetry and seeks to explain how shareholders are affected (Leventis & Caramanis, 2005). Based on the stakeholder theory, higher audit fees express lower levels of management earnings, and provides greater quality earnings, which subsequently add credibility to a firm's financial reports. Regarding the signalling theory, external auditors are considered to be a signal for the firm's disclosure quality (Sangchan et al., 2020). Corporations may appoint higher quality auditors to send positive signals to stakeholders in the stock market, which leads to higher audit fees being paid (Huang et al., 2020).

3.2 Hypotheses Development

Auditors tend to spend more time and effort in evaluating the fair-valued assets due to its complexity and the risks they face while going through this process (Griffith, 2020). The greater use of ambiguous fair-

valued assets often leads to higher audit fees (Ettredge et al., 2014). The risks became higher, particularly for Level 2 and Level 3 inputs. This results in increasing auditor's burden, and eventually driving audit prices up (Bratten et al., 2013; Xu et al., 2013). In the case of Jordan, abusing FVA has led to volatility in share prices (Abdullatif, 2016; Alharasis, 2021). It is explained by the lack of an active market, weak corporate governance regimes, and the absence of uniform guidelines on how fair value is to be measured and audited (Siam & Abdullatif, 2011). Consequently, Jordanian auditors do expect to spend more time and effort in detecting management fraud and misstatements due to information asymmetry problems (Alharasis, Prokofieva, & Clark, 2020). Increasing the credibility of a firm's financial reporting quality is deemed to be a positive signal that helps stakeholders to make decisions.

Auditing fair values varies depending on the industry type, since preparing and auditing FVMs are much more complex and riskier in some industries, than others (Abdullatif, 2016). In this respect, Lin et al. (2017) found evidence that fair-valued assets disclosed by non-finance industries are positively associated with poorer financial reporting quality caused by errors and managerial manipulation, due to the conflicts between agencies. However, Badia et al. (2017) came to a different conclusion by arguing that high audit fees paid by the finance industry are mainly driven by the fair value model, since the majority of their assets are financial ones, and measured mainly by FVA. Therefore, the corporate industry type is one of the vital determinants of audit fees (Hay et al., 2006). The level of difficulty in the auditing process varies according to the type of industry involved (Simunic, 1980; Pearson & Trompeter, 1994; Stein et al., 1994). Some industries need more audit procedures, and consequently more audit fees are paid compared to other industries (Anderson & Zeghal, 1994; Firth, 1997).

The challenges auditors face when auditing FVMs differ between finance and non-finance FVMs (Lin et al., 2017). In this respect, scholars are divided. The first group confirmed that finance firms are very complex entities, and suffer from a high risk when implementing FVA. The scholars argued that finance corporations have fair-valued assets which are the highest of all assets, and this means more work for the auditor (Badia et al., 2017; Karim & Moizer, 1996). Therefore, more expensive audit fees are paid to send positive signals to the corporation's stakeholders. Similarly, some scholars (Griffin & Lont, 2011; Matthews & Peel, 2003; Taylor & Simon, 1999) suggested that finance companies need more auditing time and effort, because their accounts are much more

complex than those of non-finance companies. The former generally has numerous offices, branches, and subsidiaries, and are harder to audit, and require more time and effort to pay auditors for their additional effort in understanding the client's diverse disclosure requirements, as well as the related risks of financial misstatements, such as litigation risks and reputation impairment (Simunic, 1980). Therefore, finance companies pay more audit fees compared to non-finance firms, and this is due to the additional effort and time spent in auditing the accounts (Griffin & Lont, 2011).

Conversely, the second group (non-finance industry) argued that the main issue heightening the audit challenge is the lack of efficient market prices for their varied and complex assets structure (Goodwin-Stewart & Kent, 2006; Hay et al., 2006). They argued that finance companies such as banks and insurance companies have simpler asset structures compared to non-finance firms. The latter have more complex assets structures, such as plants, equipment and inventories, which forces external auditors to spend more time and effort in minimising information asymmetry caused by agency problems. Although finance institutions have extensive assets, they are much easier to audit as they have large inventories and receivables. Thus, audit fees for these businesses are expected to be lower. Audit fees of manufacturing companies, however, are supposed to be higher, as these firms are likely to disclose more information, which means expensive audit costs (Craswell et al., 1995). Manufacturing firms demand superior quality of audits, since they suffer from higher agency costs. This is due to the higher diversification and decentralisation of their financial reporting systems (Stein et al., 1994). Such clients require big capital investments, which encourages them to search for external financing sources. Furthermore, the major problems in auditing FVMs in this industry are related to the management's lack of valuation knowledge (Xu et al., 2013). In this respect, higher audit fees are charged to industries with similar operations and complicated accounting practices (Bills et al., 2015; Goodwin-Stewart & Kent, 2006). This situation might cause variances in appraising the charged audit fees.

Considering the Jordanian environment, financial institutions are generally well-organised, structured, and developed. More importantly, they do adhere to the corporate governance code compared to other industries (Alhababsah, 2019). Strict regulations and strong supervision from the Central Bank of Jordan (CBJ) is evident. Therefore, this industry is likely to appoint high-quality auditors, because they have

the motivation and power to regulate the firms' financial reporting practices and subject managers, who disclose poor or misleading earnings. Forcing managers to demand high-quality audits leads to higher monitoring costs (Alhababsah, 2019; Naser & Nuseibeh, 2008). At the same time, Jordanian manufacturing firms have large capital reserves, which drive them to look for fund providers, as they are most likely to offer more disclosure. These firms are highly regulated by the government, and thus, responsible for additional disclosure to overcome public pressure, and send the right signals to market participants on profitable performances, and disclosure quality. Auditing is complex, and a large amount of disclosures requires extra auditing procedures due to the existence of the agency problems, especially for manufacturing firms (Hay et al., 2006; Al-Harshani, 2008). Higher audit fees are expected to be paid, and this will send positive signals to the users of the company information. Based on the theoretical evidence discussed above, the following hypotheses were developed:

- H₁: Corporate industry type does moderate the connection between the proportion of fair-valued assets and audit fees.
- H₂: Corporate industry type does moderate the connection between the proportion of fair-valued assets through hierarchy levels and audit fees.

4. Research Data and Methodology

4.1 Sample Selection

The data for this study was hand-collected by the researcher from the annual reports across Jordanian firms listed on the Amman Stock Exchange (ASE) website over the period of 2005-2018. This study started with the year 2005, because that was the year when the fair value for financial assets in Jordan became law as required by ISA 39, followed by the amendment of IFRS 7 in 2008. It requires corporations to disclose in detail their FVMs of financial assets. The chosen study period aligns with the first and more recent FVD requirements timelines, as requested by various IASs/IFRSs, such as IAS 39 in (2005), IFRS 7 in (2009), IFRS 9 in (2018) and IFRS 13 in (2013). The data from subsequent years were either not available or disrupted because of the COVID-19 pandemic impact.

As presented in Panel A of Table 1, the initial sample comprised of 235 firms. The final sample consisted of 222 firms, after excluding 13 firms with missing data. Panel B, therefore, isolated firms which fully

Table 1: Sample Selection Procedure

	Total Firms	Pooled (Firm*year)
<i>Panel A: Sample Selection</i>		
Initial sample	235	3290
(-) Firms with missing data	(13)	(182)
Total	222	3108
<i>Panel B: Fair Value Model vs. Historical Cost Model</i>		
Initial sample	222	3108
(-) Firms using historical cost model	(50)	(700)
Total firms using fair value model	172	2408
<i>Panel C: Industry Distribution</i>		
	Total Accepted Firms	Per cent
Total sample from Finance sectors	105	61.05
Total sample from Non-Finance sectors	67	38.95
Total	172	100.00

complied with the FVA for financial assets from other firms using the HC. The total firms which adopted the FVA requirements were 172, while 50 firms did not. Therefore, the final accepted sample to test the developed hypotheses stood at 172 firms. Panel C categorised the final accepted sample into two main sub-industries. The total number of firms accepted from the finance industry were 105, while the total firms from the non-finance industries amounted to 67.

4.2 Research Design and Variables Measurement

This analysis has expanded on the prior research (including Alexeyeva & Mejia-Likosova, 2016; Ettredge et al., 2014; Sangchan et al., 2020). The current study introduced new experimental variables, such as the moderating corporate industry type (INDS). To classify each industry, the International Securities Identification Number (ISIN) was employed (SDC, 2020). The current study extended the previous auditing FVA models into the following equations, to test the hypotheses using the Statistical Analysis Package (Stata) software (variables are defined in Table 2):

$$\begin{aligned} LnAFEES = & \delta_1 LnASSET + \delta_2 SUBS + \delta_3 LOSS + \delta_4 ROI + \delta_5 LEV + \\ & \delta_6 GROWTH + \delta_7 BIG4 + \delta_8 CHANGE + \\ & \delta_9 UNQUALIFIED + IndFE + YearFE + \varepsilon \end{aligned} \quad (1)$$

To test H₁, Equation (1) was modified by adding the corporate industry type *INDS* and the proportion of fair-valued assets, and its interaction with the corporate industry type (*INDS*FVA_TA*), as presented in Equation (2).

$$\begin{aligned} LnAFEES = & \delta_0 + \delta_1 FVA_TA + \delta_2 INDS + \delta_3 FVA_TA * INDS + \\ & \delta_4 LnASSET + \delta_5 SUBS + \delta_6 LOSS + \delta_7 ROI + \delta_8 LEV + \\ & \delta_9 GROWTH + \delta_{10} BIG4 + \delta_{11} CHANGE + \\ & \delta_{12} UNQUALIFIED + IndFE + YearFE + \varepsilon \end{aligned} \quad (2)$$

To test H₂, Equation (1) was modified by adding the corporate industry type variable *INDS*, the proportion of fair-valued assets over the hierarchy inputs (*FVA1_TA*, *FVA2_TA*, *FVA3_TA*), and the interaction term of each hierarchy input with the corporate industry type (*INDS*FVA1_TA*, *INDS*FVA2_TA*, *INDS*FVA3_TA*), as presented in Equation (3).

$$\begin{aligned} LnAFEES = & \delta_0 + \delta_1 FVA1_TA + \delta_2 FVA2_TA + \delta_3 FVA3_TA + \\ & \delta_4 INDS + \delta_5 FVA1_TA * INDS + \delta_6 FVA2_TA * \\ & INDS + \delta_7 FVA3_TA * INDS + \delta_8 LnASSET + \\ & \delta_9 SUBS + \delta_{10} LOSS + \delta_{11} ROI + \delta_{12} LEV + \\ & \delta_{13} GROWTH + \delta_{14} BIG4 + \delta_{15} CHANGE + \\ & \delta_{16} UNQUALIFIED + IndFE + YearFE + \varepsilon \end{aligned} \quad (3)$$

A group of control variables were combined into the current study's models, including control variables in prior auditing literature: *LnASSET*, *ROI*, *LOSS*, *LEV*, *GROWTH*, *SUBS*, *BIG4*, *CHANGE*, and *UNQUALIFIED*. These variables were identified as significant factors in the main audit pricing literature (Abernathy et al., 2019; Alexeyeva & Mejia-Likosova, 2016; Alhababsah, 2019; Ettredge et al., 2014; Sangchan et al., 2020).

5. Results and Discussion

5.1 Descriptive Statistics

Table 3 presents the descriptive statistics of all variables used in the empirical analysis. The mean (median) log of audit fees (*LnAFEES*) was 9.318 (9.077), suggesting that any variation in audit fees amongst Jordanian listed firms was in fact modest. Generally, audit fees ranged

Table 2: Variables Measurement

Variable	Measurement
<i>LnAFEES</i>	The natural log of audit fees (see Ettredge et al., 2014).
<i>FVA_TA</i>	Firm's total fair-valued assets deflated by total assets (see Alexeyeva & Mejia-Likosova, 2016).
<i>FVA1_TA</i> , <i>FVA2_TA</i> , <i>FVA3_TA</i>	Firm's total fair-valued assets using Level 1, Level 2, and Level 3 inputs Deflated by total assets (see Alexeyeva & Mejia-Likosova, 2016).
<i>INDS</i>	Dichotomous variable coded as 1 if the firm is a financial institution, 0 otherwise (see Lin et al., 2017).
<i>LnASSET</i>	The natural Log of a firm's total assets.
<i>SUBS</i>	The number of firm's subsidiaries/branches.
<i>LOSS</i>	Dichotomous variable coded as 1 for firms with a net income less than 0, 0 otherwise.
<i>ROI</i>	The net income by total assets.
<i>LEV</i>	The total debt divided by the total assets.
<i>GROWTH</i>	The current year sales to last year sales.
<i>BIG4</i>	Dichotomous variable coded as 1 if the audit firm is one of the Big 4 audit firms (PwC, KPMG, Deloitte, and E&Y), 0 otherwise.
<i>CHANGE</i>	Auditor tenure of three years, coded 1 if the audit firm did not change, 0 otherwise.
<i>UNQUALIFIED</i>	Dichotomous variable coded 1 if the firm receives an unqualified opinion, 0 otherwise.
<i>IndFE</i>	Industry fixed effects.
<i>YearFE</i>	Year fixed effects.
ε	Error term.

from 6.908 to 12.412. The mean (median) of the proportion of fair-valued assets (*FVA_TA*) was 0.125 (0.049). The value of the *FVA_TA* was lower than those reported by Ettredge et al. (2014) at 0.17 in the US, and Alexeyeva and Mejia-Likosova (2016), who reported 0.31 in the EU. These nations have capital markets which are substantially different than those of small and developing countries such as Jordan. In regard to the three level hierarchy inputs Level 1 (*FVA1_TA*), Level 2 (*FVA2_TA*) and Level 3 (*FVA3_TA*), the variables had a mean (median) value of

Table 3: Descriptive Statistics

Variable	Obs.	Mean	Median	Std. Dev.	Min	Max
<i>LnAFEES</i>	2408	9.318	9.077	0.980	6.908	12.41
<i>FVA_TA</i>	2408	0.125	0.049	0.176	0.000	0.804
<i>FVA1_TA</i>	2408	0.093	0.024	0.148	0.000	0.663
<i>FVA2_TA</i>	2408	0.020	0.000	0.037	0.000	0.220
<i>FVA3_TA</i>	2408	0.010	0.000	0.011	0.000	0.100
<i>INDS</i>	2408	0.610	1.000	0.488	0.000	1.000
<i>LnASSET</i>	2408	17.30	17.03	1.773	13.19	22.08
<i>ROI</i>	2408	6.681	6.964	0.942	3.135	7.640
<i>LEV</i>	2408	7.685	7.982	0.995	3.135	8.687
<i>GROWTH</i>	2408	0.042	0.026	0.789	-2.944	3.292
<i>LOSS</i>	2408	0.350	0.000	0.477	0.000	1.000
<i>SUBS</i>	2408	2.013	1.000	3.230	0.000	17.00
<i>BIG4</i>	2408	0.392	0.000	0.488	0.000	1.000
<i>CHANGE</i>	2408	0.547	1.000	0.498	0.000	1.000
<i>UNQUALIFIED</i>	2408	0.850	1.000	0.357	0.000	1.000

Note: All continuous variables are winsorized at the 1 per cent and 99 per cent levels each year to overcome the potential influence of outliers.

0.093 (0.024), 0.020 (0.000), and 0.010 (0.000), respectively. The analysis results confirmed that Level 1 assets constituted an overwhelming type of fair-valued assets held by Jordanian firms at about 0.10% of the total fair-valued assets. The hierarchy average values were close to the values reported by Lin et al. (2017) and Huang et al. (2020). Regarding INDS, seemingly the finance industry was the predominant industry from the total sample population, where the analysis confirmed that 0.61% of the samples belonged to the finance industry, compared to 0.39% in the non-finance industry.

With respect to the control variables, following Hay et al. (2006), they were grouped into three main categories: client attributes, auditor attributes and engagement attributes. For client attributes, the logarithm firm size (*LnASSET*) was widely dispersed, ranging from 0.13 to 0.22, with a mean (median) value of 17.145 (16.918). The mean (median) values of the return-on-investment ratio (*ROI*), leverage ratio (*LEV*), and sales growth ratio (*GROWTH*) were 1329 (1319), 1378 (1358), and 1.405 (1.002), respectively. The result of the loss (*LOSS*) revealed that

around 0.37 of the firms in the total sample report loss was relative to 0.43, which reported a profit for the fiscal year. The analysis confirmed that the average number of subsidiaries ranged between 0–17. For auditor attributes (*BIG4*), the analysis asserted that about 0.37 of the sample firms which were audited by Big 4 compared to those audited by the non-Big 4 audit firms was 0.63. For the engagement attributes, it appeared that Jordanian companies which change (*CHANGE*) their auditors every three years was around 0.55. This result was consistent with the JSC instructions, which required audit firms to rotate the head of the audit team at least once every four years, to ensure auditor independence (Abdullatif & Al-Rahahleh 2020). Concerning the auditor's opinion, i.e., (*UNQUALIFIED*) variable, the result emphasised that 0.85 of Jordanian businesses received an unqualified audit opinion relative to 0.15, compared to those that received a qualified one with mean value of 0.847.

5.2 Univariate Analysis

Similar to Lin et al. (2017), Table 4 presents the t-test results amongst the two sub-samples (finance vs. non-finance). Here, there were 105 firms from the research sample which belonged to the finance industry, while 67 were in the non-finance industry. Statistically, the mean difference in the amount of *LnAFEES* between each sub-sample was highly significant. The mean of the finance sample was 9.398, which was higher than the non-finance, i.e., 9.193. With respect to the application of FVD variables, it seemed that the highest implementations occurred in the

Table 4: Univariate Analysis

DV	Financial <i>INDS</i> = 1 N = 105		Non-financial <i>INDS</i> = 0 N = 67		Mean difference	<i>t</i> -value
	Mean	SD	Mean	SD		
<i>LnAFEES</i>	9.398	1.085	9.193	0.772	-0.205	-5.0239***
<i>FVA_TA</i>	0.148	0.180	0.087	0.163	-0.061	-8.3830***
<i>FVA1_TA</i>	0.124	0.160	0.044	0.109	-0.080	-13.5255***
<i>FVA2_TA</i>	0.014	0.042	0.006	0.029	-0.007	-4.7852***
<i>FVA3_TA</i>	0.009	0.013	0.001	0.007	-0.003	-5.9750***

finance industry. The mean difference between each sub-sample for the *FVA_TA*, *FVA1_TA*, *FVA2_TA* and *FVA3_TA* was highly significant, which confirmed the higher usage of FVA for financial assets in this industry. This finding was due to the differences in such sectors, and due to the complexity levels associated with the unique features of each industry. These results further support the fact that higher audit fees were paid by the finance industry, where a greater level of IFRS/FVD compliance occurred. Collectively, this led to a high level of audit complexity and risk, and time-consuming work for auditors, due to agency problems (Sangchan et al., 2020). This finding is comparable with some scholars, who suggested that finance companies are much more complex than non-finance ones, with reference to the application of fair value (Lin et al., 2017).

5.3 Correlation Analysis

Preceding the multivariate analysis, the test for multicollinearity was essential to ensure that there was no correlation problem among the independent variables used in each regression model. To address this issue, the Pearson correlation matrix was utilised. As shown in Table 5, the results of the Pearson correlation matrix confirmed that the variables were integrated in each regression model and were mostly not correlated.

5.4 Multivariate Analysis

The current study followed the work of recent scholars and employed the OLS regression technique to discover the effect of FVD on audit fees (Alexeyeva & Mejia-Likosova, 2016; Ettredge et al., 2014; Sangchan et al., 2020). The regression assumption tests were employed to test the validity of the data to the OLS regression, such as the histogram of the dependent variables (*LnAFEES*), the scatterplot test of residuals, and the autocorrelation plot graph of the residuals (see Figures A1, A2 and A3 of Appendix A). As shown in columns 1–2 of Table 6, the robust OLS regression controlled by year and industry fixed effects were the main methods applied in the current study. Columns 3–4 of Table 6 present the OLS regression with the Huber-White t-statistics, which is a popular technique for ensuring the robustness of findings if there was a heteroscedasticity problem (Alhababsah, 2019). The magnitude and signs of all control variables were generally in line with previous literature works.

Table 5: Correlation Matrix

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1	1.000														
2	0.155 ^{***}	1.000													
3	0.124 ^{***}	0.846 ^{***}	1.000												
4	0.0852 ^{***}	0.375 ^{***}	0.147 ^{***}	1.000											
5	0.040	0.187 ^{***}	0.105 ^{***}	0.0935 ^{***}	1.000										
6	0.108 ^{***}	0.169 ^{***}	0.270 ^{***}	0.0943 ^{***}	0.121 ^{***}	1.000									
7	0.753 ^{***}	-0.216 ^{***}	-0.258 ^{***}	0.0788 ^{***}	0.019	0.029	1.000								
8	0.195 ^{***}	-0.009	0.010	-0.032	-0.0753 ^{***}	-0.165 ^{***}	0.229 ^{***}	1.000							
9	0.403 ^{***}	-0.175 ^{***}	-0.101 ^{***}	0.001	-0.002	0.0588 ^{***}	0.336 ^{***}	0.122 ^{***}	1.000						
10	-0.011	0.029	0.041	0.007	0.009	0.035	0.031	0.181 ^{***}	0.034	1.000					
11	-0.182 ^{***}	0.011	0.010	-0.002	0.0650 ^{**}	0.124 ^{***}	-0.277 ^{***}	-0.548 ^{***}	-0.0969 ^{***}	-0.210 ^{***}	1.000				
12	0.251 ^{***}	-0.0622 ^{**}	-0.0496 [*]	-0.014	0.0909 ^{***}	0.0883 ^{***}	0.308 ^{***}	-0.149 ^{***}	-0.009	-0.040	0.0836 ^{***}	1.000			
13	0.548 ^{***}	-0.0841 ^{***}	-0.0981 ^{***}	0.107 ^{***}	0.033	0.0441 [*]	0.472 ^{**}	0.123 ^{***}	0.164 ^{***}	0.013	-0.117 ^{***}	0.140 ^{***}	1.000		
14	0.141 ^{***}	-0.001	0.006	0.0412 [*]	-0.013	-0.039	0.0926 ^{***}	0.011	0.0977 ^{***}	-0.0562 ^{**}	-0.033	0.0544 ^{***}	-0.039	1.000	
15	-0.003	-0.0647 ^{**}	-0.0697 ^{***}	0.035	0.004	-0.0879 ^{***}	0.004	-0.117 ^{***}	0.033	-0.0734 ^{***}	0.172 ^{***}	0.171 ^{***}	-0.022	-0.014	1.000

Notes: 1 = LnAFEEs, 2 = FVA_TA, 3 = FVA1_TA, 4 = FVA2_TA, 5 = FVA3_TA, 6 = INDS, 7 = LnASSET, 8 = ROI, 9 = LEV, 10 = GROWTH, 11 = LOSS, 12 = SUBS, 13 = BIG4, 14 = CHANGE, 15 = UNQUALIFIED; *, **, *** correlation is significant at the 0.001, 0.01 and 0.05 level, respectively.

Table 6. Regression Result: Moderating Corporate Industry Type

DV = <i>LnAFEES</i>	Column (1) OLS Coeff. (Robust t)	Column (2) OLS Coeff. (Robust t)	Column (3) Huber-White Coeff. (t-stat)	Column (4) Huber-White Coeff. (t-stat)
Intercept	3.321 (18.58)***	3.057 (16.86)***	2.830 (20.95)***	2.536 (18.43)***
<i>FVA_TA</i>	0.423 (3.62)***		0.614 (6.60)***	
<i>INDS</i>	0.035 (0.75)	0.127 (2.72)***	0.062 (1.98)**	0.003 (0.100)
<i>INDS * FVA_TA</i>	0.665 (4.53)***		0.822 (7.03)***	
<i>FVA1_TA</i>		1.024 (4.81)***		0.564 (3.02)**
<i>FVA2_TA</i>		2.381 (4.35)***		2.341 (3.34)**
<i>FVA3_TA</i>		0.593 (0.350)		0.549 (0.320)
<i>FVA1_TA * INDS</i>		-0.715 (-3.02)***		-0.235 (-1.170)**
<i>FVA2_TA * INDS</i>		2.422 (4.22)***		2.136 (2.93)***
<i>FVA3_TA * INDS</i>		-0.536 (-0.310)		-0.330 (-0.190)
<i>LnASSET</i>	0.299 (25.30)***	0.309 (26.01)***	0.343 (44.22)***	0.357 (45.29)***
<i>ROI</i>	0.000 (3.23)***	0.000 (2.84)***	0.000 (2.35)**	0.000 (1.98)**
<i>LEV</i>	0.000 (10.38)***	0.000 (10.55)***	0.000 (10.69)***	0.000 (10.37)***
<i>GROWTH</i>	-0.011 (-2.03)**	-0.010 (-1.97)**	-0.006 (-1.770)*	-0.005 (-1.370)
<i>LOSS</i>	0.075 (2.08)**	0.077 (2.12)**	0.063 (1.850)*	0.062 (1.850)*
<i>SUBS</i>	0.016 (3.47)***	0.016 (3.49)***	0.009 (2.60)***	0.008 (2.45)**
<i>BIG4</i>	0.486 (17.75)***	0.464 (17.25)***	0.440 (18.71)***	0.413 (17.51)***
<i>CHANGE</i>	0.129 (4.58)***	0.124 (4.40)***	0.075 (3.34)***	0.066 (2.97)***

Table 6. Continued

DV = $LnAFEES$	Column (1) OLS Coeff. (Robust t)	Column (2) OLS Coeff. (Robust t)	Column (3) Huber-White Coeff. (t-stat)	Column (4) Huber-White Coeff. (t-stat)
<i>UNQUALIFIED</i>	-0.027 (-0.810)	-0.032 (-0.900)	-0.010 (-0.350)	-0.017 (-0.560)
Robust	Yes	Yes	Yes	Yes
Industry and Year Effects	Controlled	Controlled	Controlled	Controlled
N	2408	2408	2408	2408
F-statistics	(139.34)***	(124.08)***	(267.19)***	(234.76)***
Adj. R ²	66 per cent	66 per cent	74 per cent	75 per cent
Mean VIF	1.80	1.76	1.80	1.76

Note: This table provides the findings of OLS regression of log of audit fees ($LnAFEES$) on the interaction corporate industry type variable with the proportions of fair-valued assets (by input Level and in total). Robust t-statistics are clustered by year and industry fixed effects following Sangchan et al. (2020). ***, **, * indicate statistical significance at the 0.01, 0.05, and 0.10 per cent levels, respectively, using a two-tailed test. All variables are defined in Table 2.

Columns 1 to 4 of Table 6 presents the OLS and Huber-White regression results for the moderating role of the corporate industry type ($INDS$), for the correlation between the proportion of fair-valued assets (and the three fair value level inputs), and the audit fees paid by Jordanian firms over the pooled years (2005–2018). The p-values are significant with the reasonable explanatory power, ranging between 66% and 75%. Diagnostics did not suggest that a multicollinearity problem existed, because the mean VIF in all models was lower than 2.

Not surprisingly, the results in column 1 indicated that the moderating role of the ($INDS$) was significant, and positive at the 0.05 level ($Coeff. = 0.665$, $Robust t = 4.53$), indicating that audit fees arising from FVD varied between finance vs. non-finance industries. Specifically, the finance industry was more likely to pay higher audit fees. One reason for this was because finance industries hold the highest ratios of fair-valued financial assets (Badia et al., 2017). Therefore, companies operating in this industry bore greater audit fees relative to non-finance industry firms. Higher FVMs led to a high-level agency problem, and increased audit risks, which required additional auditing tests and complex auditing process from the auditors. In this respect, the

auditors were expected to have advanced experience and knowledge. Thus, expensive audit prices were charged correspondingly (Griffith, 2020; Lin et al., 2017). This outcome is consistent with the univariate analysis results discussed earlier, as the mean of the *FVA_TA* was found to be significantly higher in the finance industry than the non-finance industry, where the mean of the *FVA_TA* assets in the former was higher at 0.148 compared to 0.087 for the latter.

The result was comparable with Glover et al. (2017), who came to the same conclusion for the FVA and accounting restatement knowledge. Also, it aligned with Taylor and Simon (1999), Chung and Narasimhan (2002), Karim and Moizer (1996), Stein et al. (1994), and Alexeyeva and Mejia-Likosova (2016), who documented a positive association between the finance industry and audit fees. This finding was linked to the fact that the finance industry in Jordan complied well with FVA, and did so since its initial introduction (Abdullatif & Al-Rahahleh, 2020). It was consistent with the nature of the finance industry in Jordan, as it followed strict regulations and supervision by the CBI, which required high audit-quality and expensive audit fees (Alhababsah, 2019). Although finance firms typically have simpler asset structures than non-finance firms, more offices are found for the former, and as a result, this industry requires more auditing procedures. In contrast, Hay et al. (2006), Craswell et al. (1995) and Stein et al. (1994) reported opposite findings under different circumstances. Consequently, H_1 was accepted.

Column 2 presents the analysis result of the moderating role of corporate industry types through fair value hierarchy inputs. Therefore, the proportion of fair-valued assets (*FVA_TA*) had been broken down into the three fair value input levels (*FVA1_TA*, *FVA2_TA*, *FVA3_TA*). As shown in Table 6, a negative significant impact of the moderating *INDS* on the correlation between Level 1 assets and audit fees was verified at the 0.05 level (*Coeff.* = -0.715, *Robust t* = -3.02). A significant positive coefficient was documented for the moderating effect of the *INDS* on the association between Level 2 assets, and audit fees at the 0.05 level (*Coeff.* = 2.422, *Robust t* = 4.22). However, the analysis regarding the moderating *INDS* in relation to Level 3 assets is not significant (*Coeff.* = -0.536, *Robust t* = -0.310).

In general, the results indicate that there is a significant difference in audit fees paid by corporates in the finance vs. non-finance industry in relation to Level 1 and Level 2 assets; conversely, there is no difference in audit fees paid by both industries when it comes to Level 3 assets. To

emphasise this more, higher audit fees in relation to Level 1 assets were spent in the non-finance industry. Based on the descriptive statistics results, Jordanian firms are much more likely to use Level 1 assets due to the non-availability of an efficient stock market in Jordan. Therefore, this result is in line with the previous findings of the descriptive analysis, which stipulates that Level 1 assets are the predominant type of fair-valued inputs in the Jordanian economy. Unlike the non-finance industry, high audit fees paid by the finance industry is mainly driven by the greater compliance of this industry with the FVD. This is due to the fact that the majority of assets held by the finance industry are financial assets, which are mainly measured according to the fair value model, especially for the unobservable assets, including Level 2 and 3 (Badia et al., 2017). This outcome, moreover, is comparable with literature by Craswell et al. (1995) and Hay et al. (2006), who asserted that manufacturing industries have complex asset structures, where auditing FVM needs a whole raft of valuation tests.

By contrast, higher audit fees in relation to Level 2 assets were paid by the finance industry companies. The current analysis confirmed that highly uncertain fair-valued assets (Level 2) were more complex and riskier in the finance industry, compared to the non-finance industry. The result aligned with the fact that auditing subjective fair values naturally led to higher audit prices being paid to reimburse efforts and difficulties linked with the verification of unobservable values (Abdullatif & Al-Rahahleh, 2020). As discussed in the univariate analysis above, the majority of Level 2 assets were evident in the finance industry, where the mean of these assets in the finance vs. non-finance industry was significant. The mean of Level 2 assets in the finance industry was 0.014 vs. 0.006 for the non-finance industry. Thus, having a high level of uncertain fair value led to greater risk and complexity for auditors, and greater audit prices (Huang et al., 2020; Sangchan et al., 2020).

Not surprisingly, the result of moderating industry type in relation to Level 3 was found to be insignificant due to the lower level of compliance with Level 3 fair-valued assets by Jordanian firms in both industries. Consistent with the descriptive analysis results mentioned above, the mean of Level 3 was found to be the lowest value at 0.010 relative to Level 1 and Level 2, which were 0.093 and 0.020, respectively (see Table 3). Overall, the analysis accepted H_2 in relation to Level 1 & 2 assets, while it failed to accept it for Level 3 assets.

Interestingly, the Huber-White regression findings were not substantially different from those reported in the OLS regression. Overall,

and in relation to the theory, auditing FVMs was found to be complex, with a large amount of disclosures regarding FVAs, which required extra auditing procedures due to the agency problems (Huang et al., 2020). The finance industry in Jordan is subjected to high auditing demands to eliminate information asymmetry. Expensive audit bills are expected from auditors, given the complex accounting metrics-related to tasks they perform (McDonough et al., 2020). Paying expensive audit fees is an indicator of the quality of audits, and in return, sends positive signals to stakeholders to encourage further investment (Abdullatif & Al-Rahahleh, 2020).

6. Robustness Testing

A number of additional sensitivity analyses were conducted to ensure the main regression results were robust to different measurements and estimators. Firstly, the analysis was repeated by excluding the banking industry sample (224 firm-year observations), and all results remained unchanged with those reported in the primary analysis. The results were not reported, but they are available upon request. Secondly, following Ettredge et al. (2014) and Abernathy et al. (2019), the analysis was repeated using the panel data analysis to exploit a strongly balanced panel methodology. The random effects model controlled by year and industry with fixed effects was selected to re-test the hypotheses using the panel data regression (the p-value of Hausman test was not significant at 0.34). All results remained unchanged with those reported in the primary analysis, where the interaction term of *INDS* and *FVA_TA* (and each *FVA1_TA*, *FVA2_TA*, and *FVA3_TA*) were found to be significant, with a positive sign at the 0.01 level (*Coeff.* = 0.433, *Robust t* = 2.79 (*Coeff.* = -0.898, *Robust t* = -3.45, *Coeff.* = 3.159, *Robust t* = 3.09, and *Coeff.* = -2.747, *Robust t* = -0.880, respectively). Thirdly, the moderating effect of the *INDS* on the presence of the fair value variable (*FVA*) had been examined using the total sample in Panel A of Table 1 (including firms from both *FVA* and *HC* samples – 222 firms). The *FVA* was coded as 1 if the firm's assets were reported in fair values, 0 otherwise. Including the *HC* sample, the control group method made it possible to explore if there was any difference in the audit prices across firms that adopted the fair value model, from those that did not. Un-tabulated results confirmed that the interaction term (*INDS * FVA*) was highly significant with a positive sign at the 0.01 level (*Coeff.* = 0.322, *Robust t* = 5.03). The results supported the primary analysis reported in Columns (1

and 3) of Table 6, and confirmed the fact that the audit fees paid by FVA firms vs. non-FVA firms differed based on industry type, where finance industry firms were charged higher audit fees vs. non-finance industry firms. Finally, following Goncharov et al. (2014), H_1 and H_2 were re-tested after excluding 222 firm-year observations for the GFC year 2008 from the total sample. Un-tabulated results remained consistent with the primary analysis.

7. Conclusion and Implications

Using the data from across 172 Jordanian listed firms over the period of 2005–2018, this investigation was the first of its kind to modify previous auditing models, by combining industry factor effects with reference to FVD, which reflected the client's complexity and risk indicators. Documented here is the positive and significant impact of the moderating role of corporate industry type on the connection between financial assets measured via the FVA model, and associated audit fees. The moderating role of industry type was positive with reference to Level 2 assets. Its sign was negative for Level 1, and was not significant for Level 3. The overall results supported the notion that firms with a high proportion of total FVD were more likely to have higher levels of audit complexity and risks, given the rising use of complex estimates of FVA. The problem of management bias can lead to demands for high-quality audit services, which eventually leads to higher audit fees being charged to send positive signals to stakeholders. This study, moreover, is the first to triangulate the agency, signalling, and stakeholder theories, with fair value research.

The overall findings provide policymakers and standards setters with an updated empirical evidence on the implications of FVD for auditing companies. It provides guidance on audit fee determinants arising from fair value financial reporting. By shedding more light on the complexity and risk of fair value model in developing nations, the outcomes of this study are meant to assist Jordanian authorities in supervising the audit profession, as well as in regulating auditing of fair value practices, such as, updating the minimum external audit fees for public listed firm working in different industries, and closing the expectations gap between external auditors and users of financial statements regarding fair value financial reporting. Furthermore, these findings can serve as the basis upon which audit fees will be determined. This contribution makes the findings of the analysis much more viable

and applicable to other ME countries that share the same cultural and institutional characteristics. It is important to extend the current analysis by considering further proxies of the fair value model to improve our understanding of the post FVA-implementation consequences for the audit and accounting professions. Future studies may expand on the current study to other developing countries using a longer time frame, so that the implications of the devastating COVID-19 pandemic can be captured.

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Appendix A

Figure A1: Histogram with Normal Curve for the Dependent Variable

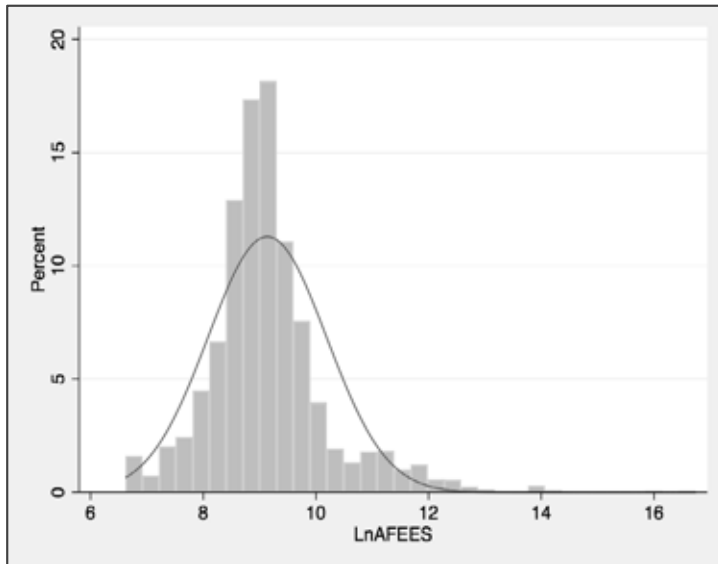


Figure A2: Probability Plot of Dependent Variable

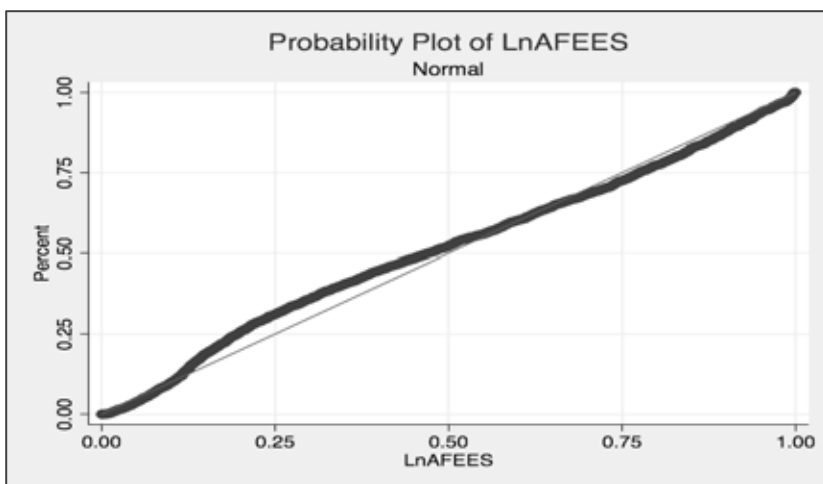


Figure A3: Histogram with Normal Curve for the Error Terms: Residuals

