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The Effect of Fair Value Accounting on Earnings Quality: A Comparative Study among Banking and Real Estate Sectors in Jordan

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Abstract

Purpose: Understanding the interplay between Fair Value Accounting (FVA) and Earnings Quality (EQ) is not only urgent but also essential for firms striving to navigate today's complex financial environment successfully. FVA serves as a vital tool to accurately value assets and liabilities, ensuring financial stability and enhancing investor confidence by providing stakeholders with transparent and relevant financial information essential for decision-making. Moreover, the quality of earnings, significantly affected by the adoption of fair value practices, directly impacts a company's performance and credibility in the eyes of investors, creditors, and regulators. This study aims to evaluate the impact of FVA on the EQ of the Jordanian banking and real estate sectors and to compare the effects between them.

Design/methodology/approach: employs quantitative research techniques to evaluate the impact and relationships between variables. The data includes 47 companies listed on the Amman Stock Exchange (ASE) for the period from 2012 to 2022, analyzed using a model to assess the effect and relationships between independent and dependent variables, with the leverage ratio serving as a moderating variable. The urgent need to incorporate leverage ratios into FVA and EQ assessments is critical for companies seeking to maintain investor confidence, mitigate risks, and enhance their financial strategies in today's dynamic business environment. The data is analyzed using both the income approach (FVANI) and the market approach (FVAMA) to fair value accounting. The effects on EQ are analyzed based on four characteristics: persistence (PR), predictability (PRED), volatility (VOL), and closeness to cash (CTC).

Findings: Findings: STATA results showed that FVA positively affected EQ, PR, PRED, and CTC in both the banking and real estate sectors in Jordan. However, the effect of FVA was stronger in the banking sector compared to real estate. The leverage ratios (LEV) moderating effect was found to be positive between FVANI and EQ, as well as VOL among banks. Moreover, LEV moderated the impact of FVANI on EQ and CTC for real estate companies. In the banking sector, LEV's role as a moderator was confirmed in the relationship between

FVAMA and both PRED and CTC. Additionally, for real estate companies, LEV's moderating effect was observed between FVAMA and EQ, PR, and VOL. Therefore, the findings should be regarded as viable evidence for account users in Jordan and investors because it offers information on appropriate measurement required to measure the FVA effects on EQ in the Jordanian banking and real estate sectors.
Research limitations/implications: This study focused on the The study population includes 15 banks and 32 real estate companies (totaling 517 observations over 11 years) listed on the ASE. The study sample consists of all banking and real estate corporations, and therefore could be generalized to the other contexts.
Practical implications: This study offers a number of important theoretical, practical and/or managerial implications. It has developed and tested the integrated model that examines how the results of this research provide insights into the impact of FVA on EQ within Jordan.
Originality/value: This study advances the understanding of how FVA impacts AEQ in the unique context of Jordan. It also underscores the roles of the LEV in shaping this relationship. These findings offer practical guidance for companies and suggest avenues for future research to further explore the implications of this study

Keywords: Banks, Earnings Quality, EQ reports, Fair Value Accounting, IFRS.

1. Introduction

Investors and the banking industry have committed substantial efforts to the quality of accounting earnings because of the fundamental role played by banks in attracting local and foreign investments, in addition to financing small and large businesses in Jordan (Alsufy, 2019). Conversely, focusing solely on the amount of earnings without considering factors that can affect these amounts will lead to a decline in the quality of earnings, thereby affecting decision-making and financial reporting (AL-Shar & Dongfang, 2017). Scholars have concentrated on the concept of EQ measurements and the effect of FV on them. The most important methods used to measure EQ in financial statements are discussed. In Jordan, FVA is deemed an appropriate measurement that is more relevant for earnings management in banking and real estate companies, but it is still uncertain whether FV provides appropriate information in emerging markets (Ahmad & Aladwan, 2015). Furthermore, it is debated whether International Financial Reporting Standards (IFRS) FV measurements should be adopted in markets (add reference). The financial intuition is that banks and real estate firms seek to maximize their return on assets. The FV gains and losses affect the earnings behavior of banking and real estate companies on assets and liabilities, but these FV gains and losses do not equate to returns on assets (AL-Shar & Dongfang, 2017). This is particularly true for FVA as an appropriate measure for today’s financial EQ for companies that follow IFRS (Al-Rahamneh, 2018).

In general, IFRS has been deemed a high-quality standard that adds to the enhancement of the quality of annual statements. Thus, the quality of annual statements is still a matter of subjective drive, particularly in relation to the real estate market, because the implementation of the IFRS standard is complex. The International Accounting Standards Board (IASB) issued two standards that designate the “valuation of real estate companies' assets” (Camfferman & Zeff, 2015; Garzella et al., 2019). Firstly, International Accounting Standards (IAS) 16: "Property, Plant and Equipment," which is employed to assess real estate companies' private undertakings, including administrative or manufacturing events. Secondly, IAS 40: "Investment Property," which is utilized to assess real estate companies' assets that are acquired with the purpose of generating both income and capital gains and not just to be utilized as an aspect of the

companies' core activities. Based on IAS 40, companies have the option to select the FV concept or historical cost concept for reporting investment properties. FVA denotes the practice that firms increase or decrease the value of their assets in the financial reports to reflect the variations in the market values of these assets (Camfferman & Zeff, 2015). One of IASB's key goals is to develop "a single set of high-quality, understandable, enforceable, and universally accepted" accounting standards (Ahmed, 2015). This accounting criterion stipulates that the information in financial reports should be of high quality, transparent, and equitable. Hence, IFRS enhances the quality of annual statements or accounting quality and assists capital market participants and other users in making proper financial judgments (Tang, 2017).

Good corporate governance mechanisms lead to improved performance of companies (Shatnawi et al., 2021, b; Shatnawi et al., 2020). Interest in the concept of FV's effect on EQ captured attention when the Jordan Securities Commission (JSC) questioned the loan loss accounting of Arab Bank with respect to gains (losses) from financial assets at FV through profit or loss (AlQudah, 2020). According to Al-Sharif (2020), banks have justifications to use their discretion in establishing loan loss provisions to manage reported capital and earnings. This action is subjected to FV measures. Conversely, there is a paucity of evidence on the effect of FV on assets and liabilities on EQ for banks within their IFRS provisions. Evidence on this concept is unclear about the concept of bank earning measures based on FV: some studies find that banks with good FV implementation have higher EQ in Jordan (Aladwan & Saaydah, 2015; Nazal, 2018) while others report a negative relation (Siam & Abdullatif, 2011). However, it has recently been indicated that Jordanian banks using EQ measures consider the impacts of FVA in meeting up with regulatory capital standards (i.e. IFRS) (Altawalbeh, 2020), Etim, et al., 2023 Their results were showed positive association between Fair value at different levels and earnings management. but more studies are still needed to fully comprehend both the concept and practice of Jordanian banks' FVA. "IFRS 13 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price)" (IFRS Foundation, 2011, p.1).

The purpose of the present study is to identify the concept of FVA and its effect on EQ measures among banks and real estate firms listed on the -ASE-. To achieve this, EQ measures—including persistence (PR), predictability (PRED), volatility of earnings (VOL), and closeness to cash (CTC) based on banks' and real estate firms' incomes—are examined as they are effected by the concept of FVA. This analysis aims to directly capture the effect of using FVA on EQ measures. PR, PRED, VOL and CTC are considered better measures of EQ among capital market participants. Depending on how EQ is measured, account users apply FVA as input to determine predicted earnings. The adoption of the FV concept based on IFRS for measuring EQ among Jordanian banking and real estate sectors proves valuable and is expected to enhance decision-making in these sectors. Furthermore, the main goal of this study is to evaluate the effect of FVA on the EQ of the Jordanian banking and real estate sectors and to compare the effects between them. Other aims of the study include comparing the effects of FVA on EQ between the Jordanian banking and real estate sectors.

The remainder of this paper is structured as follows: First, the literature review covers FVA and EQ in the banking and real estate sectors, focusing on studies from Jordan. Next, the research hypotheses are outlined. The research methodology section details the quantitative approach, data collection, and analysis methods. The results section presents the findings from the regression analysis, discussing the effect of FVA on EQ and comparing the impact of FVA on EQ in both sectors. The discussion section interprets the results, considers their implications,

addresses limitations, and suggests future research. Finally, the conclusion summarizes the main findings and provides recommendations for policymakers and practitioners.

2. Literature Review

AL-Shar and Dongfang (2017) investigated the effects of FVA on commercial banks in Jordan, found that evaluating financial instruments at fair values significantly impacts bank financial performance. Furthermore, a company's future performance, measured by operating income or operating cash flow, is positively associated with current FVA revaluations (Ahmad & Aladwan, 2015). Shbeilat (2019) observed the practicality of FVA and its key application challenges among Jordanian bankers. The findings indicated general approval for the application of fair values in financial statements, although there were some reservations about relevance, particularly in terms of predictive and feedback value. Al-Haddad and Whittington (2019) discovered that the market value of share prices was associated with FVA disclosures. Moreover, unrealized gains and losses affect net income.

When considering FVA in relation to EQ, Abbadi et al. (2016) revealed that FVA adjustments included in other comprehensive income (OCI) can predict earnings both one and two years forward. They further added that reliable measurement of fair values improves predictive value. The FVA adjustments recorded in OCI are indicative of future efficiency, countering criticism that FVA mandated banks to record excessive downward adjustments. Furthermore, Bataineh et al. (2016) showed that banks with substantial FVA reporting in financial accounts have a higher level of combined EQ. Regarding FVA measurements, the lack of accuracy in FVA estimates and earnings volatility are attributed to inconsistencies between assets measured at FVA and liabilities measured at historical cost (Assaf et al., 2014). The measurement of FVA in financial reports helps provide information that signifies the company's financial situation and the management's oversight by declaring assets and liabilities on the balance sheet at their current market value (Alaryan et al., 2014).

3. Hypothesis Development

FVA provides a tool for revealing managers' undisclosed information about asset values. A study has found a relationship between FVA and a company's future performance, reflected in the firm's future operating income and cash flows (Aladwan & Saaydah, 2015). FVA tends to maximize a firm's total assets, thereby attracting more investments and increasing its ability to secure additional debt. This increase in overall investments can lead to a rise in the firm's share prices. It is more likely that an effect on a company's operational performance can be observed when utilizing FVA (Artemenkov et al., 2018). This is considered the first step in developing the hypotheses for the current study.

It is also argued that the future utility of a firm relies on its value-generating assets; reevaluated measures provide the basis for forecasting the company's future performance if these measures reflect FVA (Shaffer, 2011). Asset FVA represents the current value of expected future cash flows. When fair values consistently determine asset values, changes in fair values should result in changes in future performance. Operational performance is defined as operating income and operating cash flow. This study investigates the effect of FVA on EQ and their potential impacts on the Jordanian banking and real estate sectors, primarily reflected in operating income and cash flows. Specifically, there is no relationship between a Jordanian company's current year asset estimates and its future operating cash flow. This is considered the second step in developing the hypotheses for the current study.

Consistent with the two steps explained above, theories such as "Positive Accounting Theory" and the "Dynamic Theory of Balance Sheet" form a major purpose and the backbone of the current study's hypotheses. Positive Accounting Theory explains a process that uses the capacity, understanding, and information of accounting most suitably for dealing with market/transaction situations in the future. It primarily assumes that the purpose of accounting theory is to explain and predict accounting practices, where explanation implies providing reasons for the observed practice. These theories focus on enhancing the investments of investors and have become the leading theories in the FVA and EQ literature, there have been discussions about creating value for stakeholders, which form a fundamental goal of contemporary corporate business success (Sodan & Slavko, 2015; Lind & Nordlund, 2019). The accounting theory remains fundamental for FVA accounting, with the intention of applying it along with the dynamic theory of the balance sheet, as both theories are suitable for the current conditions of economic activity.

3.1 Persistence

The concept of earnings persistence is linked to the notion that a company maintains and sustains its earnings over the long term. From this perspective, earnings are characterized by quality when they can be sustained into the future, as companies desire stability in performance and earnings (Li, 2008). Earnings persistence demonstrates that a bank's ability to forecast future earnings—associated with a high market share price or higher EQ—contrasts with a company's poor capability to forecast future earnings, which indicates poor EQ (Afsheena & Santhakumar, 2020). The greater the earnings persistence, the more capable the company is of conserving current earnings and achieving higher EQ (Frankel & Litov, 2009). The relevance of accounting profit for predictive purposes depends on the level of persistence and its components. There is a difference between accounting profit and cash flows from operations, stemming from accruals. Unlike cash items, accruals are subjective and more prone to misstatements and errors in measuring the accrual elements of profit. By using reported earnings and the cash and accrual components, companies aim to predict future profitability (Al Awawdeh & Nour, 2020). Conversely, DeFond et al. (2020) indicated that FVA has a significant effect on the performance of earnings and the persistence of earnings in an emerging market like Jordan. Barth (1994), Bratten et al. (2016), and Cristea (2018) reported that high fair values in less reliable accruals result in lower earnings persistence. This negative effect of FV can ultimately lead to accruals incongruity. Toluwa & Power (2019) claim that low persistence in accruals is associated with many events, such as acquisitions and FV adjustments. Consequently, banks and real estate firms with low EQ experience lower stock returns after the reporting period. Therefore, this study is conceptualized to explore these dynamics further:

H01: FVA has no positive effect on the earnings persistence of the Jordanian banks.
H1: FVA has a negative effect on the earnings persistence of Jordanian banks.
H02: FVA has no positive effect on the earnings persistence of the Jordanian real estates.
H2: FVA has a negative effect on the earnings persistence of Jordanian real estates

3.2 Predictability

Earnings predictability is a significant measure as it deals with how effectively previous earnings can explain current and future earnings (Samih et al., 2020). Quality earnings are defined as the capability of earnings to predict future earnings and cash flows (Schiemann & Guenther, 2013). Holt (2013) indicated that earnings predictability (PREDi), when modified for earnings shocks, shows a higher variance but lower predictability. This research uses the square root of error modification. Large or small values of PREDi result in either lower or

higher predictability in earnings and correspondingly lower or higher EQ in banking and real estate firms. Consistent with this, earnings unpredictability is an additional characteristic that designates the time-sequential effects of earnings. It is computed as the standard deviation of earnings (Samih et al., 2020). In line with previous studies such as Assaf et al. (2014) and Galera et al. (2010), higher prices suggest lower levels of earnings unpredictability, which are presumed to indicate lower EQ in Jordanian banking and real estate firms. Therefore, this study hypothesizes that:

H03: FVA has no positive effect on the earnings predictability of the Jordanian banks.
H3: FVA has a negative effect on the earnings predictability of Jordanian banks.
H04: FVA has no positive effect on the earnings predictability of the Jordanian real estates.
H4: FVA has a negative effect on the earnings predictability of Jordanian real estates.

3.3 The Volatility of Earnings

Al-Khadash and Khasawneh (2014) indicated that companies' earnings are a driver of market performance, and inconsistent earnings suggest higher risk and negative impacts of FV. Damayanty and Murwaningsari (2020) pointed out that earnings volatility can predict earnings using financial forecasts, which is inversely associated with FVA. Earnings volatility may result from external financial shocks faced by companies or flaws in the accounting process used to measure income (Al-Sharif, 2020). Earnings with low volatility display high persistence and subsequently, higher predictability. Conversely, earnings with high volatility suggest less reliable predictability. Higher volatility results in a scarcity of internal cash (Gu et al., 2002). Moreover, volatile earnings increase the probability of a shortage of access to internal and external capital, as well as underinvestment, which negatively affects the FV impact on banking and real estate earnings (Fiechter, 2011). This event is termed investment alterations, which are negatively associated with future earnings. Furthermore, the precision of accounting measures, the depreciation of asset approaches used, and stock estimate approaches can measure the level of volatility displayed by earnings (Fiechter, 2011). Moreover, the accounting practice of recognizing losses more readily than gains and transaction-based accounting can make earnings volatile (Dichev & Tang, 2008). Therefore, this study is conceptualized to explore:

H05: FVA has no positive effect on the earnings volatility of the Jordanian banks.
H5: FVA has a negative effect on the earnings volatility of Jordanian banks.
H06: FVA has no positive effect on the earnings volatility of the Jordanian real estates.
H6: FVA has a negative effect on the earnings volatility of Jordanian real estates.

3.4 Closeness to Cash

According to Visvanathan (2006), closeness-to-cash refers to earnings that estimate operating cash flows, which are commonly viewed as a necessary property of earnings. Mohammed (2020) did not find that FV affects unexpected earnings in banks, as indicated by the earnings response coefficient, which depends on the extent to which earnings are historically close to operating cash flows. Sodan (2015) used FV as a new measure of firm-group accounting closeness for earnings but did not report any effect on earning measures. Closeness-to-cash is a desirable EQ attribute, which is common among researchers (Ross et al., 2019). Some security analysts indicated that earnings can be considered right to the bank, and deposits are not subject to FV; thus, FVA has no effect on bank earnings (Paoloni et al., 2017). In Jordan, the banks' closeness-to-cash profile is considered a determinant of how unexpected earnings are construed by banks (AL-Shar & Dongfang, 2017). If companies regularly report earnings that approximate cash flows, then market participants assume recent unanticipated earnings are comprised mostly of cash flows, and unexpected earnings are perceived more negatively than

when the departure between earnings and cash flows is not significant. Alhilfi and Ali (2017) apply the concept of closeness-to-cash as a desired property of earnings, not FVA. Hence, earnings are closer to cash flows, while FV is relatively negative to accruals, which cannot produce higher EQ. Therefore, it can be conceptualized that:
H07: FVA has no positive effect on earnings closeness to cash of the Jordanian banks.
H7: FVA has a negative effect on the earnings closeness of Jordanian banks.
H08: FVA has no positive effect on earnings closeness to cash of the Jordanian real estates.
H8: FVA has a negative effect on the earnings closeness of the Jordanian real estates.

3.5 Comparative Effect of FVA on EQ

The study proposed that there are in the effects of FVA on EQ between banks and real estate sector. The statement of the hypothesis was stated as follows:
H9: Comparative effect of FVA on EQ between the Jordanian banking and real estate sectors.

3.6 Control Variables: Return on Assets (ROA) and Company Size (SIZE)

ROA is considered one of the most evaluated measures of a firm's profitability, as it reveals the firm's capacity to realize profits relative to the size of invested assets. Numerous studies have shown that profitability has a positive impact on the value of a corporation, such that the more profitable the firm, the higher its value (Easleyet al., 2002).

Company size is a metric used to represent the apparent scale of a company. Larger companies are more likely to adopt accounting techniques that align with their size. Reducing a company's size is a strategy to decrease disclosure demands from regulators and related parties (Pangaribuan et al., 2019). Corporates may avoid using the FVA model to omit reporting revaluation gains arising from asset valuation, thereby inflating the company's size. Alternatively, firms might choose the cost model to reduce the political pressure they face (Farshadfar & Monem, 2011). This study proposed that the control variables of this study, including company size and ROA, have negative effect on the EQ of Jordanian banking companies. Two main hypotheses were proposed in this study as follows:
H010: Return on Assets and Company Size have no positive effect on the EQ of the Jordanian banking companies.
H10: Return on Assets and Company Size have negative effect on the EQ of the Jordanian banks.
H011: Return on Assets and Company Size have no positive effect on the EQ of the Jordanian real estate companies.
H11: Return on Assets and Company Size have negative effect on the EQ of the Jordanian Jordanian real estate sectors.

3.7 Moderator Variables: Leverage Ratio (LEV)

Under standard conditions, using debt and equity - financial leverage enhance earnings per share (EPS), subsequently increasing the dividend distribution capacity and thereby improving the value of the corporations. Consequently, the value of banks and real estate is expected to moderate financial leverage. When companies increase financial leverage, equity stakeholders may experience increased dividends. Consequently, increased leverage results in a rise in the cost of equity. According to the agency cost theory, when debt is utilized, the agency values of debt also rise with leverage, whereas the amount of equity and the agency costs of equity decline. This results in a reduction in the overall agency values. Jensen and Meckling (1976) argue that there is an optimal combination of leverage associated with a minimum total of agency costs. Jensen and Meckling (1976) also noted that debt negatively relates to the market

value of a corporation due to conflicts of interest between owners and executives arising from agency risk issues. These perspectives have spurred substantial research and produced mixed findings over various periods. Previous studies have confirmed that leverage impacts stock returns (Guo et al., 2011; Obradovich & Gill, 2013). The diverse arguments regarding the relationship between leverage and stock price have driven significant research in this area.

The hypothesis of this study assumed that the effect of FVA on EQ is not expected to be moderated by the LEV. Specifically, four hypotheses were developed to reflect the moderating role of leverage ratio between FVA and EQ characteristics. The hypotheses were stated as follows:

H012: The leverage ratio (as a moderator) does not positively affect the relationship between FVANI and EQ of the Jordanian banking companies.

H12: The leverage ratio moderates the relationship between FVANI and EQ of Jordanian banks

H013: The leverage ratio (as a moderator) does not positively affect the relationship between FVANI and EQ of the Jordanian real estate companies.

H13: The leverage ratio moderates the relationship between FVANI and EQ of Jordanian real estate sectors

H014: The leverage ratio (as a moderator) does not positively affect the relationship between FVAMA and EQ of the Jordanian banking companies.

H14: The leverage ratio moderates the relationship between FVAMA and EQ of Jordanian banks

H015: The leverage ratio (as a moderator) does not positively affect the relationship between FVAMA and EQ of the Jordanian real estate companies.

H15: The leverage ratio moderates the relationship between FVAMA and EQ of Jordanian real estate sectors

4. Methodology

4.1 Sample Selection

The study population includes 15 banks and 32 real estate companies (totaling 517 observations over 11 years) listed on the ASE. The study sample consists of all banking and real estate corporations.

4.2 Data Collection

Data were collected from secondary sources, specifically the annual reports of banking and real estate firms covering the period from 2013 to 2021. The secondary data were acquired from accounting records and sources available on the ASE website.

4.3 Variables Measurement

This section provides a summary of the variables and their measurements, consistent with earlier studies (Bratten et al., Muller et al., 2011; 2012., Paoloni et al., 2017., Tsitsoni & Markou, 2013):

Table 1: Summary of the variables and their measurements

Variables	Abbrev.	Description
Dependent Variables		
Earnings Persistence	PERS	Earnings persistence is determined using gradient coefficient valued from auto-regression model of earnings, as follow: $X_{j,t} = \phi_{0,j} + \phi_{1,j} X_{j,t-1} + V_{j,t}$
Earnings Predictability	PRED	Earnings predictability is measured by using the square root of the error modification from equation (1).

		PREDi = $\sqrt{\sigma^2}(v_{is})$ Also, computed the standard deviation of earnings using VAR= σ (X_{is}) where X_{it} is firm j's earnings in year t.
Earnings Volatility	VOL	Earnings Volatility will be measure using standard deviation of comprehensive income σ(CI)i,t divided by standard deviation of operating cash flows σ (OCF)i,t for each company i: VOLi = $\frac{\sigma \text{ (CI)i,t}}{\sigma \text{ (OCF)i,t}}$
Closeness to Cash	CTC	The closeness to cash will be measure as follow: (CTC) = σ(NI j,t) / TA j,t ÷ σ(OCF j,t) / TA j,t $NI_{j,t}$ and $NI_{j,t-1}$ are corporate j't earnings in year t and t-1, respectively $TA_{j,t}$ is total assets for current year to corporate j't CFO j,t is operating cash flow for current year to corporate j't
Aggregate Earnings Quality	AEQ	Aggregate of earnings quality (AEQ) for companies' comprehensive income (i.e. for the lists banks and real estates) is derivative of equations (1), (2), (4), and (7): $\frac{\text{AEQ} = [\text{RANK(PRi)} + \text{RANK(PREDi)} + \text{RANK(VOLi)} + \text{RANK(CTCi)}]}{4}$
Independent Variables		
Fair Value Accounting (FVA)	FVANI	Fair value will be measured according to income approach, through the ratio of complete value of Other Comprehensive Income (OCI) to complete value of Net Income Plus Other Comprehensive Income. $FVAIN_{i,t} = \frac{Abs(OCI)}{Abs\,(NI)\ +\ Abs\,(OCI)}$
	FVAMA	FVA will be measured according to market approach through market to book value ratio $FVAMA_{i,t} = \frac{Market\ Value\ per\ Share}{Book\ Value\ per\ Share}$
Control Variables		
Return on Assets	ROA	ROA = Net Income / Total Assets
Company Size	SIZE	Company Size = log (Total Assets)
Moderator Variable		
Leverage ratio	LEV	This will be measured using leverage ratios: Debt-to-Assets Ratio = Total Debt / Total Assets.

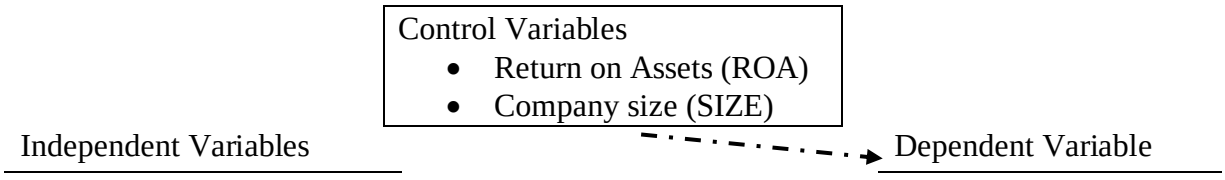
4.4 Research Model

Figure 1 below presents the hypothetical model for this study. It depicts FVA as an independent variable, EQ as a dependent variable, with ROA and SIZE as control variables. To examine the effect of FVA on the EQ of Jordanian banking and real estate companies, the study employs the following main econometric model:

$$EQ_{it} = \beta_0 + \beta_1 FVA_{it} + \beta_2 LEV_{it} + \beta_3 ROA_{it} + \beta_3 SIZE_{it} + \varepsilon_t$$

Where:

EQ_{it} is the earnings quality attribute for corporate i at time t, FVA_{it} is the fair value accounting for corporate i at time t,, LEV_{it} is the leverage ratio for corporate i at time t, and ROA_{it} is the ROA for corporate i at time t, and $SIZE_{it}$ is the total assets of corporate i at time t.



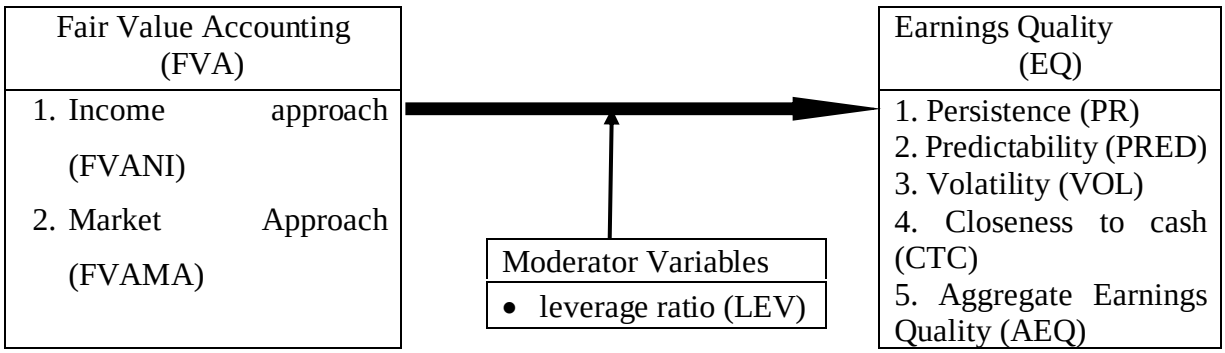


Figure 1: Conceptual Framework of the Study

Results

5.1 Descriptive Statistics

In this section, descriptive information about the variables is discussed. The data for this study were extracted from 47 companies over the period from 2012 to 2022 (11 years), resulting in a total of 517 observations. This section provides descriptive statistics for the variables. Table 5.2 displays data for the entire sample.

Table 2: Descriptive Statistics

Descriptive Information of Earning Quality								
	Full Sample				**Banks**		**Real Estate**	
Variable	**Min**	**Max**	**M**	**Std**	**M**	**Std**	**M**	**Std**
Persistence of earnings (PR)	-.34	.81	-.03	.34	-0.09	0.89	0.03	0.41
Predictability of earnings (PRED)	.09	2.94	.39	.38	0.27	0.94	0.51	0.34
Volatility of earnings (VOL)	-.83	8.95	-.02	.82	-0.11	0.91	0.07	0.51
Closeness to cash (CTC)	-.85	1.01	.68	.40	0.41	1.01	0.85	0.31
Aggregate Earnings Quality	-.32	3.12	.25	.30	0.16	0.59	0.34	0.21
Descriptive Statistics of Fair Value Accounting								
Fair value accounting income approach	.00	.99	.132	.21	0.17	0.20	0.09	0.81
Fair value accounting market approach	.00	46.15	.944	2.07	0.97	2.04	0.91	2.01
Fair value accounting	.00	23.08	.538	1.04	0.57	0.99	0.50	1.01
Descriptive Statistics of Leverage Ratio								
Leverage ratio (LEV)	.00	.93	.421	.35	0.54	0.89	0.30	0.92
Descriptive Statistics of Control Variables								
ROA	-54.05	40.70	0.07	5.98	0.10	1.31	0.04	4.10
SIZE	137,049.00	27,813,906,000	881,722,919	3,942,669,017	1,762,232,919	1,818,221,193	1.214,192.00	200,109
LSIZE	11.83	24.05	18.14	2.726	22.37	1.82	13.91	1.91
Normality Analysis								
Variable	**Skewness< ±1.96**				**Kurtosis<±3**			
FVANI	1.927				2.986			
FVAMA	1.051				1.407			
ROA	-1.526				2.734			
SIZE	1.341				2.191			
PR	.741				-.970			
PRED	1.587				1.654			
VOL	1.120				2.250			
CTC	-1.365				2.623			
LEV	.283				-1.628			
Main variable								
FVA	1.620				2.500			
AEQ	1.502				2.933			
Result of Multicollinearity								
Variable	**Tolerance > 0.10**				**VIF<10**			
FVANI	.959				1.042			

FVAMA			.896			1.117			
ROA			.896			1.116			
SIZE			.798			1.254			
LEV			.769			1.301			
Main variables									
FVA			.704			1.420			
Correlation Matrix									
	VOL	**CTC**	**PRED**	**PRES**	**FVANI**	**FVAMA**	**ROA**	**LogTA**	**Lev**
VOL	1								
CTC	-.080	1							
PRED	.702**	-.045	1						
PR	-.043	.124**	-.079	1					
FVANI	.007	.083	-.030	.003	1				
FVAMA	.011	.014	.046	-.028	-.008	1			
ROA	.070	-.015	.054	-.022	-.005	-.310**	1		
FSIZE	.024	-.064	-.027	.010	.091*	-.021	.191**	1	
LEV	.315**	-.549**	.389**	-.117**	-.178**	.080	.044	-.005	1
Correlation among main variables									
	AEQ	**FVA**							
AEQ	1								
FVA	.21**	1							
Heteroscedasticity Results									
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity									
Ho: Constant variance									
Variables: fitted values of logAEQ			chi2(1)			1.67			
			Prob > chi2			0.13			
Variables: fitted values of logPR			chi2(1)			1.69			
			Prob > chi2			0.56			
Variables: fitted values of logPRED			chi2(1)			1.26			
			Prob > chi2			0.26			
Variables: fitted values of logVOL			chi2(1)			1.43			
			Prob > chi2			0.35			
Variables: fitted values of logCTC			chi2(1)			1.94			
			Prob > chi2			0.11			
Autocorrelation Results									
DV	Lags(p)	Chi2	Df	Prob>chi2	Conclusion				
AEQ	1	1.624	1	0.6103	H0: accepted				
PR	1	1.561	1	0.1561	H0: accepted				
PRED	1	1.741	1	0.1366	H0: accepted				
VOL	1	1.415	1	0.6541	H0: accepted				
CTC	1	1.425	1	0.5491	H0: accepted				
H0: no serial correlation									

N=517

5.1.1 Descriptive Statistics of Earning Quality (EQ)

EQ in this study is measured using an index comprising four variables: PR, PRED, VOL, and CTC. Table 2 presents the descriptive statistics for earnings quality, including the number of observations (N), minimum, maximum (Max), mean (M), and standard deviation (std). Table 5.2 displays data for the entire sample, as well as for the real estate and banking sectors.

In terms of the persistence of earnings in Jordanian banks and real estate, the mean value of -0.03 suggests a slight decrease in PR among companies in Jordan. This indicates that earnings are not consistently sustained over time. The standard deviation of 0.34 points to limited variation in PR among organizations. However, in the real estate sector, the persistence of earnings drops to -0.09, while in banks, it increases to 0.03. This supports the notion that

variations exist between sectors, with the banking sector exhibiting higher persistence of earnings compared to real estate.

The predictability of earnings assesses a company's ability to reliably forecast its future earnings. The mean value of 0.39 suggests that Jordanian companies, on average, have a moderately reliable ability to predict their earnings, which is beneficial for planning and risk management. The low standard deviation of 0.38 indicates that this predictability varies slightly across sectors. In real estate, the mean is 0.27, while in banks, it increases to 0.51, indicating that banks have a higher capability of predicting their earnings. This is logical since banks typically have better structures and mechanisms for earnings prediction, whereas real estate is more exposed to market fluctuations.

VOL measures the fluctuations in a company's earnings over time. With a mean value of -0.02, Jordanian firms experience low earnings volatility on average. This level of volatility could be due to the economic and financial environment in Jordan, impactd by factors such as interest rate fluctuations, economic cycles, and regulatory changes (reference?). The standard deviation of 0.82 suggests that there is relatively high variability in earnings volatility across companies and sectors, attributable to variations in business strategies and risk exposures. VOL is higher in real estate, with a mean of -0.11, compared to banks, which have a mean of 0.07.

CTC evaluates the proximity of a company's reported earnings to its actual cash flows. The mean value of 0.68 suggests that Jordanian companies generally maintain a moderate to high level of alignment between reported earnings and cash flows. However, the low standard deviation of 0.40 indicates minimal dispersion in this relationship among companies. CTC is higher in banks, with a mean of 0.34, while in real estate, it is 0.16.

AEQ, or earning quality, provides a composite assessment of various factors affecting the overall quality of earnings in Jordanian companies. The mean value of 0.25 suggests that these firms exhibit moderate AEQ, which may reflect a balance between income recognition policies and the need for transparency and reliability. The standard deviation of 0.30 implies that there is low heterogeneity in EQ across companies. AEQ is higher in the banking sector, with a mean of 0.34, and lower in real estate, with a mean of 0.16.

5.1.2 Descriptive Fair Value Accounting

The descriptive information for fair value accounting is presented in Table 2, which includes variables such as FVANI and FVAMA.

The mean of FVANI is 0.132, indicating that, on average, organizations in the sample of this study incorporate the income approach as part of their fair value accounting practices. The standard deviation of 0.21 suggests low variability in the extent to which the income approach is utilized among different organizations. Specifically, the mean drops to 0.09 in real estate and increases to 0.17 in the banking sector.

The mean value of FVAMA is 0.944, indicating that, on average, a large number of organizations incorporate the market approach as part of their fair value accounting practices, but to a greater extent compared to the income approach. The standard deviation of 2.07 suggests significant variability in the utilization of the market approach among different organizations. This variability could be attributed to the sample including financial institutions and real estate companies, which have differing usages of the market approach in both sectors.

This is also reflected in the mean values, which are 0.91 in real estate and 0.97 in the banking sector.

FVA is a financial reporting method that measures the value of assets and liabilities at their current market prices. The mean value of 0.538 suggests that, on average, organizations in Jordan utilize FVA to some extent. The standard deviation of 1.04 indicates variability in the extent to which fair value accounting is adopted among different organizations. Some organizations may rely more heavily on fair value measurements, while others may use it to a lesser extent. Specifically, FVA accounts for 0.50 in real estate and 0.57 in the banking sector.

5.1.3 Descriptive Statistics of Moderating Variable -Leverage Ratio (LEV)

The descriptive information of the variables of leverage ratio is presented in Table 2, The LEV **.**ranged between zero and 0.93. The mean of the leverage ratio is 0.421, suggesting that companies in Jordan have an average debt-to-equity ratio of 42.1%. This ratio is used to measure the extent to which a firm relies on borrowed funds (debt) to finance its operations and investments. A leverage ratio of 0.421 implies that, on average, these firms maintain a relatively moderate level of debt compared to their equity, which could indicate a balanced capital structure. The standard deviation of 0.35 indicates a slight degree of variability in the LEV among the firms in the sample. Specifically, the LEV decreases to 0.30 in real estate and increases to 0.54 in the banking sector.

5.1.4 Descriptive Statistics of Control Variable

This study used ROA and firm size (SIZE) as control variables. The natural log of firm size was also calculated. The descriptive information for these variables is presented in Table 2.

The value of ROA ranged between -54.05 and 40.70. The mean ROA of 0.07 indicates that, on average, companies in the sample exhibit a modest ROA. The large standard deviation of 5.98 implies significant variability in ROA among the companies. This variation could be attributed to differences in industry, management efficiency, competitive dynamics, and market conditions among the firms. Specifically, ROA decreases to 0.04 for real estate and increases to 0.10 for banks.

The mean SIZE is 881,722,919 Jordanian Dinars, with a minimum of 137,049.00 and a maximum of 27,813,906,000. The extremely high standard deviation (3,942,669,017) indicates considerable variation in firm size among the companies in this study. However, these figures differ between real estate and banks. The mean firm size for real estate is 1,214,192, while for banks, it is 1,762,232,919. These statistics describe the distribution of the natural log of firm size (LSize) across 517 observations. The minimum LSIZE is 11.83, the maximum is 24.05, and the mean is 18.1438, with a standard deviation of 2.726, indicating significant variability. Specifically, the log of firm size is 13.91 for real estate and 22.37 for banks.

5.1.5 Normality Results

The findings suggested that several variables, namely firm size, FVAIN, and FVAMA, deviated from the requirements of normality, evident from skewness values above 1.96 or kurtosis values surpassing 3. Nevertheless, it is important to acknowledge that within the existing body of literature, there is room for flexibility in tackling this issue. In this context, using data transformation techniques is widely recognized as an appropriate approach for achieving data normalization. Researchers have compared many approaches, including Blom, Tukey, Van der Waerden, and Rankit, to determine their effectiveness. The findings indicate

that the Van der Waerden method performs superiorly in terms of data transformation (Lüpsen, 2018; Sheskin, 2007). Therefore, the present research chose to use the Van der Waerden technique for data transformation, which is based on ranking the values from lowest to highest and then applying the Van der Waerden technique to achieve normal distribution. After the data transformation, the skewness and kurtosis values of the variables were recalculated. According to the data shown in Table 6, the observed skewness values were found to be within the accepted range of less than absolute 1.96, while the kurtosis values also fell within the accepted range of less than absolute 3.

5.1.6 Multicollinearity Results

Multicollinearity occurs when there is a high correlation between two variables. Various methods can be used to assess it, with one approach involving checking the tolerance and variance inflation factor (VIF). To ensure the absence of multicollinearity, the tolerance should exceed 0.10, and the VIF should be less than 10 (Pallant, 2020). As shown in Table 7, the tolerance values are all greater than 0.10, with the lowest value being 0.769, attributed to leverage. Similarly, the highest VIF value is 1.301, also related to leverage. These values satisfy the criteria of having tolerance values above 0.10 and VIF values below 10. The main variables also meet these criteria, aligning with the guidelines outlined by Hair et al. (2010) and Pallant (2020).

5.1.7 Correlation Matrix

The second method for evaluating collinearity involves using a correlation matrix to assess the bivariate associations among variables. According to Hair et al. (2010), it is recommended that the correlation between two independent variables should not exceed 0.8. Exceeding this threshold indicates collinearity, necessitating the removal of one variable to resolve the issue.

However, the study's correlation matrix, displayed in Table 2, indicates that all interrelationships among variables exhibit values lower than 0.8. Specifically, there is a positive correlation of 0.702 between PR and VOL, and a negative correlation of -0.549 between LEV and CTC. Additionally, a positive correlation of 0.315 is observed between LEV and VOL, and a negative correlation of -0.310 exists between FVAMA and ROA, indicating a moderate negative association between these variables. All other correlation coefficients in the matrix are below 0.31, confirming the absence of significant multicollinearity concerns among the variables.

5.1.8 Heteroscedasticity Results

To assess the presence of heteroscedasticity, researchers recommend using the Breusch-Pagan/Cook-Weisberg test approach (reference). This method involves testing the null hypothesis that the observed data exhibit consistent variance levels, indicating homoscedasticity and absence of heteroscedasticity concerns. Typically, the null hypothesis is rejected if the p-value (Prob>chi2) is less than 0.05, and accepted if the p-value exceeds 0.05. In this study, Stata software was utilized to transform all variables into their logarithmic values. The findings, presented in Table 2, consistently yield p-values above 0.05. This consistent pattern of findings provides substantial evidence supporting the adoption of the null hypothesis. Thus, it implies that the variance remains consistent and there are no indications of heteroscedasticity concerns within the data collected for this study.

5.1.9 Autocorrelation Results

This section examines the presence of autocorrelation, also known as serial correlation, which occurs when the values of a dependent variable are significantly associated with its values from previous periods. This phenomenon is particularly relevant in financial data concerning variables such as PR, PRED, VOL, CTC, and AEQ, where values observed in one year, such as 2012, may closely relate to those observed in the following year, such as 2013. To address this issue, researchers recommend using a lagged error term by one period (t-1), as described by Fahrmeir et al. (2013). Various methods are available to assess autocorrelation, with one of the most commonly used and effective being the Breusch-Godfrey LM test (Bahn & McGill, 2013; Hun, 2011).

According to this approach, the null hypothesis (H0) suggests the absence of any serial association. To evaluate this hypothesis, regression analysis was conducted using lagged values of the variables, followed by the implementation of the Breusch-Godfrey LM test.

The study's results, presented in Table 2, indicate that the p-value exceeds the significance level of 0.05. This finding suggests insufficient evidence to reject the null hypothesis. Consequently, no empirical support is found for the presence of serial correlation, indicating the absence of autocorrelation in the dataset analyzed in this study.

6. Regression Results

6.1 Effect of FVA on EQ

This section examines the direct effects of independent variables on earnings quality, specifically focusing on the impact of FVA on the EQ of banks and real estate companies. The study included a sample of 15 banks and 32 real estate companies. It hypothesized that FVA has no effect on the EQ within these sectors. Separate analyses were conducted for each hypothesis, incorporating control variables (ROA and SIZE) in the same equation. Introduce what Table 3 is all about.

Table 3: Effect of FVA on EQ of banks

	Result of Hypothesis (Bank)						**Model**		
H	**I.V**	**D.V**	**B**	**Std**	**T**	**P**	**F**	**Prob>f=**	**R^2**
H1	FVA	Earning persistence	0.374	0.161	2.322	0.007**	(3, 146)=1.90	0.004	0.181
H3	FVA	Earnings predictability	0.366	0.149	2.423	0.025**	(3, 146)=33.1	0.000	0.404
H5	FVA	Earnings Volatility	0.330	0.134	0.76	2.462	(3, 146)=2.96	0.004	0.193
H7	FVA	Closeness to cash	0.264	0.093	2.838	0.008	(3, 146)=3.48	0.004	0.340
	Result of Hypothesis (Real Estate)						**Model**		
H2	FVA	Earning persistence	0.148	0.044	3.363	0.001**	(3, 316)=2.74	0.000	0.331
H4	FVA	Earnings predictability	0.112	0.051	2.180	0.003**	(3, 316)=1.84	0.021	0.241
H6	FVA	Earnings Volatility	0.001	0.026	0.76	0.445	(3, 316)=6.62	0.445	0.114
H08	FVA	Closeness to cash	0.018	0.006	3.02	0.006	(3, 316)=7.70	0.001	0.329

*,**, *** indicates significance at the 10%, 5%, 1%, levels

Table 3 presents the results of hypothesis testing concerning the relationship between FVA and earnings quality in banks and real estate. Initially, the hypothesis proposed no positive effect between FVA and other EQ characteristics. However, the results indicate otherwise:

In the banking sector, the coefficient for the effect of FVA on earnings persistence (H1) is 0.374, with a p-value less than 0.05. Similarly, earnings predictability (H3) shows a coefficient of 0.366, also with a p-value less than 0.05, indicating significant and positive impacts. Additionally, the effects of FVA on earnings volatility (H5) and closeness to cash (H7) are significant, with p-values less than 0.05. Thus, three hypotheses are significant, suggesting that an increase in the level of earning persistence, earnings predictability and closeness to cash leads to an increase in AEQ.

In the real estate sector, earnings persistence (H2) exhibits a coefficient of 0.148 with a p-value less than 0.05, indicating a significant effect. Furthermore, the effect of FVA on earnings predictability (H4) is significant, with a coefficient of 0.112 and a p-value less than 0.05. However, for H6, the effect of FVA on earnings volatility is insignificant, with a p-value greater than 0.05 (p-value=0.445). Nevertheless, the effect of FVA on closeness to cash (H8) is significant, with a coefficient of 0.018 and a p-value less than 0.05.

Table 4: Comparative Effect of FVA on AEQ of Banks and Real Estate

H	I.V	D.V	Coefficient	T-statistics	P-value
H9	FVA	AEQ (Banks)	0.533	5.610	0.000***
	FVA	AEQ (Real Estate)	0.270	3.363	0.001**

As depicted in Table 4, the effect of FVA on AEQ in banks is 0.533 with a p-value less than 0.05, indicating significance. Similarly, the effect of FVA on AEQ in real estate is also significant, with a coefficient of 0.270 and a p-value less than 0.05. Therefore, H9 is significant because both sectors show a significant effect, with a larger coefficient observed for banks compared to real estate. Thus, it can be concluded that an increase in the level of FVA leads to higher AEQ: which is in agreement with the results of Yao et al. (2018), Paoloni et al. (2017) and Takacs et al. (2020).

A plausible explanation for the greater impact of FVA on AEQ in banks compared to real estate relates to differences in asset composition, regulatory requirements, financial instrument complexity, and market sensitivity. Banks, dealing extensively with financial instruments and facing a complex regulatory environment, tend to experience a more pronounced effect of FVA on EQ compared to real estate firms, which primarily manage tangible assets such as properties. In addition, the introduction of IFRS 13, which renewed the regulation of fair value accounting, resulted in a measurable improvement in the EQ of banks (Takacs et al. (2020).

6.1.2 Control Variable and EQ of Jordanian Banking and Real Estate Companies

Table 5: Effect of Control Variables on EQ in Banks

Hypotheses (Banks)	Control variables	Dependent variable	Coefficient	T-statistics	P-value
H10	ROA	AEQ	0.79	2.75	0.007**
	SIZE	AEQ	0.220	3.01	0.003**
Hypotheses (Real estate)	**Control variable**	**D.V**	**Coefficient**	**t-statistics**	**p-value**
H11	ROA	EQ	.013	0.80	0.986
	SIZE	EQ	.94	1.93	0.055*

Table 5 presents the findings on the effects of ROA and SIZE on EQ of banking and real estate sectors in Jordan. As for banking sector, the effects of Return on Assets and Company Size (H10) are significant, as evidenced by ROA (coefficient = 0.79, p-value < 0.05) and SIZE (coefficient = 0.220, p-value < 0.05) on AEQ.

Meanwhile, as for real estate sector, the finding reveals that the effect of ROA (coefficient = 0.013, p-value > 0.05) is not significant, whereas the effect of SIZE (coefficient = 0.94, p-value < 0.1) on AEQ (H11) is significant.

6.1.3 Leverage Ratio as a Moderator between FVA and EQ of Banking and Real Estate Companies

Table 6: Moderating Role of leverage Ratio between FVA and EQ of Banks

H	I.V	D.V	sector	Coefficient	T-statistics	P-value
H12	FVANI*LEV	EQ	Bank	.198	1.99	0.049**

H	I.V	D.V	sector	Coefficient	T-statistics	P-value
H13	FVANI*LEV	EQ	Real Estate	.45	4.74	0.001**
H14	FVAMA*LEV	EQ	Bank	-.092	.43	0.666
H15	FVAMA*LEV	EQ	Real Estate	.039	2.23	0.027**

The results of testing the leverage ratio (LEV) as a moderator for H12, the moderating role of the leverage ratio between FVANI and AEQ of Jordanian banking companies, showed a positive moderation effect of the leverage ratio (Coefficient = 0.198, P < 0.05). Thus, H12 is accepted. Similarly, for H13, the moderating effect of the leverage ratio between FVANI and EQ of real estate companies showed a positive moderation effect (Coefficient = 0.45, P < 0.05). Thus, H013 is accepted.

However, the effect of FVAMA on AEQ is not moderated by the leverage ratio in the banking sector. Therefore, H14 is not accepted., with a coefficient of -0.092 and a p-value greater than 0.05.
Conversely, the leverage ratio moderated the effect of FVAMA on AEQ in the real estate sector (Coefficient = 0.039, P-value < 0.05). Thus, H15 is accepted.

7. Conclusion

The results of this research provide insights into the impact of FVA on EQ within Jordan. The findings underscore the positive impact of FVA on EQ in both the banking and real estate sectors of Jordan, particularly in EQ measurement. This indicates that firms using FVA techniques in these industries enhance the accuracy and reliability of their EQ. These results align with the principles of FVA, aimed at providing stakeholders with more precise and transparent financial information. However, it should be noted that the impact of FVA on EQ is more pronounced in the banking industry compared to its impact in real estate.

Regarding control variables, ROA emerges as a significant driver of adjusted earnings quality, earnings persistence, earning predictability, and volatility of earnings among banks. Additionally, firm size shows a robust positive correlation with AEQ, within the banking sector. In the real estate sector, ROA demonstrates a notable impact on earnings Similarly, SIZE plays a crucial role in positively influencing earnings among real estate companies in Jordan.

Furthermore, the study highlights the leverage ratio's crucial role as a moderator in shaping the relationship between FVA and AEQ This moderating effect is particularly evident in the banking sector, where the LEV positively impacts the connection between FVANI and AEQ, as well as between FVANI and earnings volatility. Likewise, the LEV exerts a moderating impact in the real estate sector, enhancing the relationship between FVANI and AEQ, and between FVAMA and closeness to cash.

Additionally, this study advances the understanding of how FVA impacts AEQ in the unique context of Jordan. It also underscores the roles of the LEV in shaping this relationship. These findings offer practical guidance for companies and suggest avenues for future research to further explore the implications of this study.

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